4.9 TRANSPORTATION AND TRAFFIC

This section includes a description of existing traffic and circulation conditions; transit, bicycle, and pedestrian facilities; and parking conditions in and around the Project site. The section also examines the effect of the Revised Project on each of these components. TJKM Transportation Consultants prepared the impact analysis for this EIR. TJKM's *Supplemental Traffic and Circulation Impact Analysis for the Proposed Homes at Deer Hill Project* (TJKM Supplemental TIA) is also included in Appendix L of this Draft Supplemental EIR. The TJKM Supplemental TIA provides a detailed description of the methodology used by TJKM.

For clarity, this section is organized into subsections by topic, as follows:

- Section 4.9.1: Traffic and Circulation
- Section 4.9.2: Transit, Pedestrian, and Bicycle Facilities
- Section 4.9.3: Parking

4.9.1 TRAFFIC AND CIRCULATION

4.9.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section describes the regulatory framework, existing conditions, impacts, and mitigation measures concerning traffic for the Revised Project.

Operational traffic analyses typically focus on intersections rather than roadway segments, because traffic capacity constraints in urban areas usually take place at intersections. Study intersection operations were evaluated using level of service calculations, based on methodology outlined in the 2000 Transportation Research Board Highway Capacity Manual (HCM). Level of service (LOS) is a qualitative description of intersection operations and is reported using an A through F letter rating system to describe travel delay and congestion. LOS A indicates free flow conditions with little or no delay, and LOS F indicates jammed conditions with excessive delays and long back-ups. The level of service methodology is detailed in in the TJIM Supplemental TIA (see Appendix L). In most cases, the level of service analysis is performed using intersection turning movement volumes during each of the AM and PM commute peak hours; the analysis presented herein also includes the mid-afternoon peak hour that occurs around school dismissal for the Pleasant Hill Road/Soccer Field/Park driveway only.[1]

[1] The Certified EIR included LOS analysis at all study intersections for the mid-afternoon school dismissal peak hour, which demonstrated that LOS and delay during that period were better than during the a.m. and p.m. commute peak hour, and the Terraces of Lafayette Project impacts during that period would be less than significant. Because the Revised Project would generate fewer trips during the afternoon school dismissal peak than the Terraces of Lafayette Project, further LOS analysis of that peak period is not needed to conclude that the Revised Project impacts would be less than significant.

Peak hour traffic operational conditions for signalized intersections are reported as average control delay for the overall intersection measured in seconds per vehicle with corresponding levels of service. The relationship between the control delay and level of service for signalized intersections is summarized in Table 4.9-1. In addition to the control delay and level of service relationships shown in the table, the City of Lafayette has the following definitions:

- "Good" LOS D is defined as 35 to 45 seconds of average control delay per vehicle.
- "Poor" LOS D is defined as 45 to 55 seconds of average control delay per vehicle.

For unsignalized intersections, average control delay is reported for the critical minor stop-controlled approach, with corresponding levels of service. Level of service criteria for unsignalized intersections are summarized in Table 4.9-2.

For roundabouts, operating conditions were evaluated using the HCM 2010 Operations methodology in SIDRA roundabout analysis software. As with signalized intersections, peak hour traffic operational conditions for roundabouts are also reported as average control delay for the overall facility in seconds per vehicle with corresponding levels of service. Level of service criteria for roundabouts as determined by control delay is shown in Table 4.9-3.

The HCM and City of Lafayette level of service criteria described above are not used to determine significant impacts for the Pleasant Hill Road corridor, with the exception of the Pleasant Hill Road intersections at Mount Diablo Boulevard/Highway 24 Eastbound On-ramp and at Old Tunnel Road/Highway 24 Eastbound Off-Ramp. The Pleasant Hill Road Corridor, which includes all the intersections on Pleasant Hill Road from Highway 24 to Rancho View Drive, is analyzed using the Routes of Regional Significance Delay Index Methodology (per General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines).

Caltrans Guidelines

The California Department of Transportation (Caltrans) is responsible for the maintenance and operation of State routes and highways. In the vicinity of the Project site, Caltrans has jurisdiction over State Highway 24. Caltrans maintains a volume monitoring program and reviews local agencies' planning documents (such as this Draft Supplemental EIR) to assist in its forecasting of future volumes and congestion points.

Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) is intended to provide a consistent basis for evaluating traffic impacts to State facilities. The City recognizes that "Caltrans endeavors to maintain a target level of service at the transition between LOS "C" and LOS "D"… on State highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target level of service."[2]

[2] Caltrans, 2002, *Guide for the Preparation of Traffic Impact Studies*, page 1.

TABLE 4.9-1 SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

LOS	Description	Average Control Delay (Seconds)
A	Free flow/non-congested operation. Turning movements are easily made and all queues clear in a single signal cycle.	≤ 10.0
B	Stable operation/minimal delays. An occasional approach phase is fully utilized. Drivers begin to feel somewhat restricted within platoons of vehicles.	> 10.0 to 20.0
C	Stable operation/acceptable delays. Major approach phases fully utilized. Backups may develop behind turning vehicles.	> 20.0 to 35.0
D	Approaching unstable operation/tolerable delays. Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.	"Good" D: > 35.0 to 45.0
		"Poor" D: > 45.0 to 45.0
E	Unstable operation/significant delays. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream of intersection.	> 55.0 to 80.0
F	Forced flow/excessive delays. Represents jammed conditions. Traffic demand exceeds the capacity. Queues may block upstream intersection.	> 80.0

Source: Transportation Research Board, 2000, *Highway Capacity Manual*; City of Lafayette, 2002, General Plan.

TABLE 4.9-2 UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

LOS	Description	Average Control Delay (Seconds)
A	Free flow/non-congested operation.	≤ 10.0
B	Stable operation/minimal delays.	> 10.0 to 15.0
C	Stable operation/acceptable delays.	> 15.0 to 25.0
D	Approaching unstable operation/tolerable delays.	> 25.0 to 35.0
E	Unstable operation/significant delays.	> 35.0 to 50.0
F	Forced flow/excessive delays.	> 50.0

Source: Transportation Research Board, 2000, *Highway Capacity Manual*.

TABLE 4.9-3 ROUNDABOUT LEVEL OF SERVICE CRITERIA

LOS	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	> 10.0 to 15.0
C	> 15.0 to 25.0
D	> 25.0 to 35.0
E	> 35.0 to 50.0
F	> 50.0

Source: Transportation Research Board, 2010, *Highway Capacity Manual*.

Contra Costa Transportation Authority (CCTA)

The CCTA is responsible for managing the county's transportation sales tax program and providing countywide transportation planning. CCTA is also the county's designated Congestion Management Agency and is responsible for implementing the Congestion Management Program (CMP), which is updated every two years. Each CMP must contain several components, including traffic level-of-service standards for freeway segments and standards for CMP Monitoring Intersections on principal arterials.[3] The most recent CMP was adopted in December 2011.

The CCTA is also in charge of implementing the Growth Management Program (GMP). A primary component of the CCTA's GMP is the requirement that local jurisdictions engage in "cooperative, multi-jurisdictional planning." Such multi-jurisdictional planning in turn requires that Regional Transportation Planning Commissions (RTPCs) prepare "Action Plans for Routes of Regional Significance" (Action Plans), which provide for "Multi-modal Transportation Service Objectives" (MTSOs) that establish quantifiable measures of effectiveness and include dates for attaining the stated objectives.

The Lamorinda Program Management Committee (LPMC) is a sub-group of the Southwest Area Transportation Committee, which serves as the RTPC for purposes of preparation of Action Plans for Lamorinda. In 1995, the LPMC adopted an Action Plan for Routes of Regional Significance, primarily focusing on State Highway 24/BART corridor. In 1998, a separate Action Plan for Pleasant Hill Road was prepared, and in December, 2009, the Lamorinda Action Plan Update, prepared by DKS Associates, updated and combined all of Lamorinda's separate action plans into one area-wide document that continued to identify Pleasant Hill Road as a Route of Regional Significance. The MTSOs for Pleasant Hill Road set forth several objectives, including "Maintain peak hour peak direction delay index of 2.0 or lower."[4] Policies from the Lamorinda Action Plan that are relevant to the Revised Project are shown in Table 4.9-4.

Lafayette General Plan

The Lafayette General Plan provides a description of the functional classification hierarchy of city streets as follows (a description of the street network in the study area is provided below in the Existing Conditions section):

- **Arterial Roadways.** Arterial streets are the major streets within the city that carry the traffic of local and collector streets to and from the freeways and other major streets, with controlled intersections, providing the primary routes through the city. In Lafayette, arterial roadways generally provide direct access to properties.

[3] Contra Costa Transportation Authority, 2007, *Contra Costa Congestion Management Program, 2007 Update*, page 2.

[4] The delay index ("DI") is the ratio of the travel time during the peak hour to the travel time that would be experienced during off-peak, free-flow periods.

TABLE 4.9-4 LAMORINDA ACTION PLAN POLICIES RELEVANT TO TRAFFIC

Objective/ Policy Number	Objective/Policy Content
Multi-Modal Transportation Service Objectives – State Highway 24	
1	Maintain a Delay Index (DI) of 2.0 (2.5 after 2030) or lower on the SR 24 corridor between I-680 and the Caldecott Tunnel during peak periods in the peak commute direction including freeway on-ramps. The DI is a ratio of peak period travel time to off-peak period travel time. A Delay Index of 1.0 would indicate that the traffic moves at free-flow speed unconstrained by congestion and not exceeding the posted speed limit. As congestion increases and the average speed decreases, the Delay Index rises. A Delay Index of 2.0 indicates that the trip would take twice as long during the peak hours as during the uncongested off-peak.
2	Maintain a Delay Index (DI) of 1.5 or less for all but the six most congested hours of the day.
3	Maintain an hourly average loading factor (ratio of passengers to seats) of 1.5 or less approaching Lafayette Station westbound and Orinda Station eastbound during each and every hour of service. An hourly averaging loading factor of 1.5 indicates that the number of passengers served during the hour is 50 percent greater than the number of seats available during that hour.
Multi-Modal Transportation Service Objectives – Pleasant Hill Road	
1	Establish CCCTA bus service on Pleasant Hill Road and/or Taylor Boulevard that has a composite frequency of at least two buses per hour during peak commute and school times (6:30 a.m. – 9:30 a.m. and 3:30 p.m. – 6:30 p.m.) and direct connection to the Lafayette BART station.
2	Maintain school bus service on Pleasant Hill Road and Taylor Boulevard.
3	Maintain a maximum wait time for drivers on side streets wishing to access Pleasant Hill Road or Taylor Boulevard of one signal cycle or less.
4	Maintain peak hour peak direction delay index of 2.0 or lower.
Multi-Modal Transportation Service Objectives – San Pablo Dam Road/Camino Pablo	
1	Maintain peak hour peak direction delay index of 2.0 or lower.
2	The maximum wait time for drivers on side streets wishing to access San Pablo Dam Road or Camino Pablo should be no greater than one signal cycle.
Actions for Pleasant Hill Road	
1	Monitor and evaluate traffic speed and other safety issues on an annual basis.
2	Protect adjacent residential streets through the installation of traffic calming measures.
3	Provide increased enforcement of the existing speed limit.
4	If the CCCTA cannot increase service to Acalanes School, evaluate the feasibility of augmenting the existing school bus program to add the high school as funding permits.
5	Support added person trip capacity on regional freeways that could divert traffic from Pleasant Hill Road.
6	Support development of HOV lane programs on all freeways and regional routes where feasible.
7	Support the provision of public transit service in the Pleasant Hill Road / Taylor Boulevard Corridor with connections to BART and other CCCTA services in Lafayette.

TABLE 4.9-4 LAMORINDA ACTION PLAN POLICIES RELEVANT TO TRAFFIC

Objective/ Policy Number	Objective/Policy Content
8	Support the provision of Park and Ride lots north of Lafayette's segment of Pleasant Hill Road.
9	Support school start times on Pleasant Hill Road that reduce peak commute loads on the roadway.
10	Investigate appropriate mechanisms, including maintaining existing roadway lanes and widths and restrictive signal timing, to discourage use of Pleasant Hill Road as a substitute for freeway travel.
11	Support pedestrian and bicycle safety improvements around schools, trailheads, and at intersections and along the bikeway network.
12	Work with TRANSPAC to develop a traffic management program to encourage delay in order to discourage use of westbound/southbound traffic using Pleasant Hill Road to bypass the I-680 SR 24 interchange.
Gateway Constraint Policy	
	Maintain capacity constraints at selected gateways with the intent of preserving and improving mobility on regional routes within Lamorinda. For Pleasant Hill Road, the two southbound through lanes on Pleasant Hill Road–Taylor Boulevard are proposed as a gateway constraint. The location and other details of the gateway constraint are to be defined in a traffic management plan developed jointly with TRANSPAC (see Action 12 in Table 9). Pleasant Hill Road is two lanes in each direction from its merge with Taylor Boulevard south to SR 24 with additional turn lanes at most intersections. The first signalized intersection south of the Pleasant Hill Road-Taylor Boulevard merge is at the "T" intersection with Rancho View Drive. Other major intersections are at Green Valley Road, Reliez Valley Road, Spring Hill Road, and Stanley Road/Deer Hill Road. Each of these signalized intersections has left- and right-turn lanes on Pleasant Hill Road. The capacity constraints on arterials providing access to the Lamorinda area are determined by the number of lanes and the timing of signals at intersections near the entry point. On Pleasant Hill Road southbound during the AM peak period, capacity is determined primarily by the timing of signals at the four major intersections and how much green time is given to Pleasant Hill Road. While the gateway policy addresses physical characteristics at key intersections, the timing of signals can also act as a metering point, as discussed below in the Traffic Management strategy section.

Source: Lamorinda Action Plan Update, 2009, pp. 6, 21, 25.

- **Collector Roadways.** Collector streets distribute traffic between local streets and major arterials and provide for through traffic movement within a limited area. Collector streets also connect residential neighborhoods with arterial streets as well as give direct access to abutting properties.
- **Local Roadways.** The primary function of local streets is to provide direct access to abutting properties. When through traffic is permitted to use local streets, the result is the disruption of neighborhoods and traffic hazards, so they are often designed to discourage through traffic.
- **State Highways and Freeways** are designed as higher-speed and higher-capacity limited-access facilities, which are intended to meet the need for relatively longer regional and intercity trips. Caltrans controls the design, operation, and maintenance of freeways and State highways.

The General Plan Circulation Element identifies goals, policies, and programs related to the city's street network. Goals and policies relevant to the Project are listed in Table 4.9-5.

TABLE 4.9-5 GENERAL PLAN POLICIES RELEVANT TO TRAFFIC

Goal/Policy Number	Goal/Policy Content
Goal C-1	*Develop a safe and efficient circulation system that respects Lafayette's quality of life and community character and is consistent with other City goals.*
Policy C-1.2	Level of Service Standards and Goals: Establish the following level of service standards and goals. Transportation improvements must be consistent with the community's strong desire to preserve Lafayette's unique identity and quality of life. *Signalized Downtown Intersections: LOS Standard is Poor D.* *Signalized Intersections Outside Downtown: LOS Standard is Good D.**
Goal C-2	*Regulate traffic so as to preserve the peace and quiet of residential areas.*
Policy C-2.1	Manage Traffic Flow: Discourage diversion of through traffic onto local streets.
Goal C-3	*Regard the quality of life in Lafayette and maintaining community identity as more important than accommodating through traffic.*
Policy C-3.1	Community Identity and Through Traffic: Place a higher priority on safety, encouraging a pedestrian-oriented design and scale; and on maintaining quality of life and identity of residential neighborhoods than on accommodating through traffic.
Goal C-4	*Coordinate land use and circulation planning.*
Policy C-4.1	Balance Circulation and Land Use Patterns: Limit development to that which can be adequately served by Lafayette's circulation system.
Goal C-7	*Reduce automobile travel demand.* *Measures to manage travel demand, called Transportation Systems Management (TSM), are directed at reducing the number of single-occupant vehicles using the circulation system during peak hour commute periods. These programs include advocating public transit; promoting carpooling and vanpooling; encouraging telecommuting and compressed work weeks; providing shuttle buses to transit facilities; providing incentives and rewards for bicycling, walking and telecommuting; and offering preferred parking for carpools.* *The Measure C Growth Management Program requires each jurisdiction in Contra Costa County to adopt a Transportation Systems Management Ordinance. The TSM programs also enable the City to achieve the "Clean Air Goals" established by the Bay Area Air Quality Management District.*
Goal C-8	*Promote alternatives to the single-occupant automobile.*
Program C-8.1.2	Consider the needs of public transit, such as bus stops, shelters, turnouts, etc. when planning roadway improvements and when reviewing development proposals.

* See the Regulatory Framework section, above, for a definition of "Poor" and "Good" LOS D. Source: Lafayette General Plan, 2002, http://www.ci.lafayette.ca.us, accessed on November 9, 2011.

Existing Conditions

This section discusses existing roadways, volumes, and level of service in the vicinity of the Revised Project site.

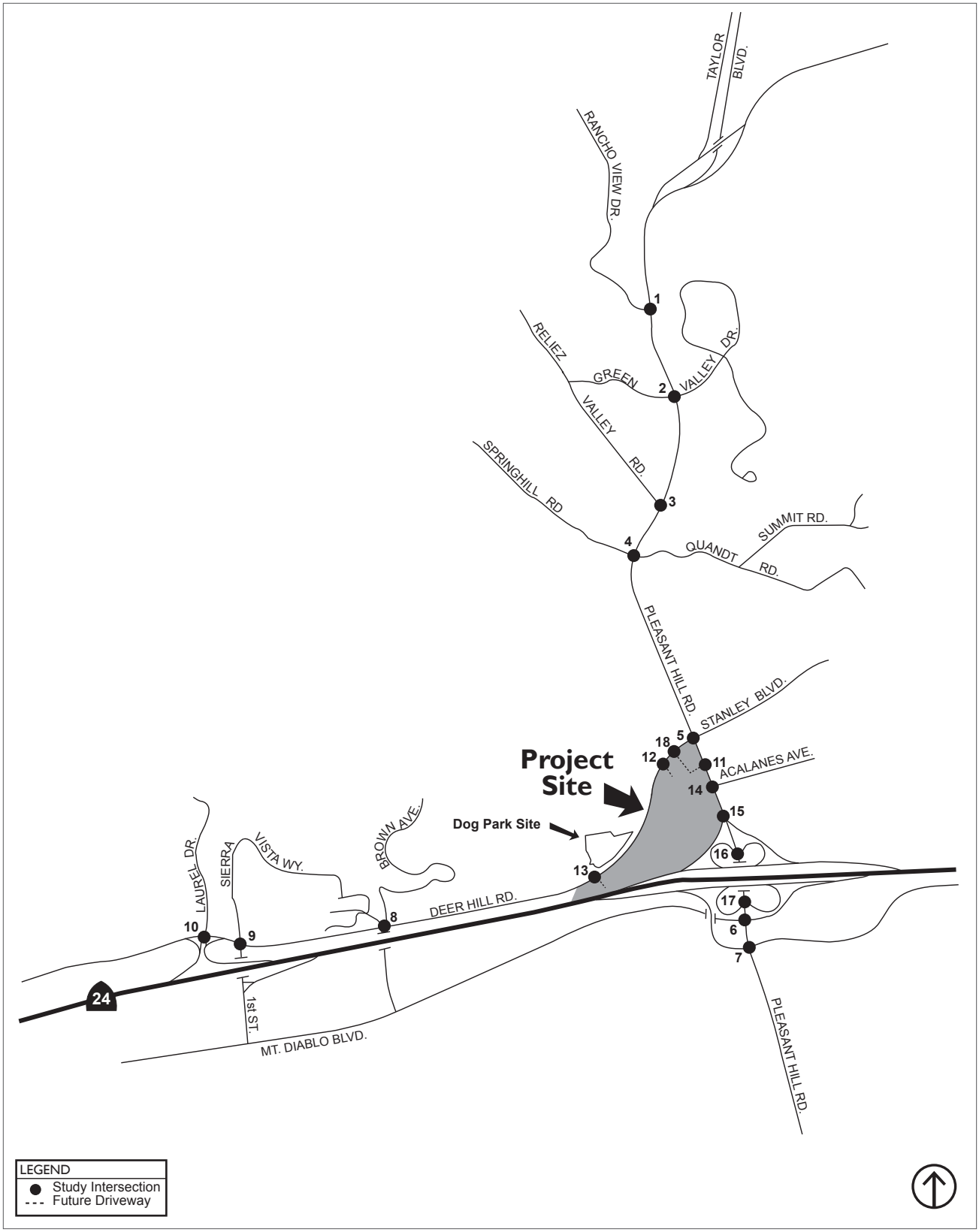
Roadway Network

Regional roadway access to the Project site is provided by Pleasant Hill Road and its interchange ramp connections with Highway 24. Highway 24 and Pleasant Hill Road north of Highway 24 are designated by

the Contra Costa Transportation Authority (CCTA) as Routes of Regional Significance. Access to the project site at the local level is provided by Deer Hill Road. The Project site vicinity is shown in Figure 4.9-1.

The existing circulation network within the study area is composed of a State highway, as well as City arterials, collectors, and local streets. Primary roadways within the study area include the following:

- **Highway 24** is an east-west freeway that runs along the south boundary of the Project site, connecting Interstate 680 in Walnut Creek with Interstate 980 and Interstate 880 in Oakland, via the Caldecott Tunnel. The freeway is an eight-lane, divided facility with BART tracks running along the median, including a BART station platform in downtown Lafayette. Highway 24 carries about 178,000 vehicles per day near the Pleasant Hill Road interchange, according to Caltrans data for year 2010. Highway 24 is a CCTA-designated Route of Regional Significance.
- **Pleasant Hill Road** is a four-lane arterial that runs north-south along the east boundary of the Project site, and connects with Highway 24 at a full interchange immediately south of the Project site frontage. It connects Deer Hill Road with Mount Diablo Boulevard and Olympic Boulevard to the south and the City of Pleasant Hill, City of Walnut Creek, City of Martinez, unincorporated Contra Costa County, and northeasterly areas of Lafayette to the north, and provides access to Acalanes High School, Springhill Elementary School, and Briones Regional Park. The road serves as an alternative route to I-680, particularly during periods of peak congestion on the freeway. Pleasant Hill Road is a CCTA-designated Route of Regional Significance north of Highway 24.
- **Deer Hill Road** is an east-west arterial street that runs along the northwesterly boundary of the Project site, connecting Pleasant Hill Road on the east with Happy Valley Road on the west. It has two lanes between Pleasant Hill Road and First Street, and widens to four lanes with left-turn lanes and raised medians west of First Street, where it provides access to the Lafayette BART station and westbound State Highway 24 freeway ramps. Along the northern edge of the Project site, the road is at its steepest, and it curves before descending to meet Pleasant Hill Road. East of Pleasant Hill Road, the street name changes to **Stanley Boulevard**, a two-lane collector street that provides access to Acalanes High School and an alternative route to the City of Walnut Creek.
- **Mount Diablo Boulevard** is an east-west arterial street with two lanes in each direction and sections with either a center left-turn lane or dedicated left-turn lanes and raised medians, which extends from Acalanes Road on the west to Pleasant Hill Road on the east, providing access through the entire length of downtown Lafayette. At its easterly and westerly ends, Mount Diablo Boulevard connects with State Highway 24 freeway ramps.
- **First Street** is a four-lane arterial between Mount Diablo Boulevard and Deer Hill Road that runs north-south and connects to Highway 24 with an eastbound freeway on-ramp. North of Deer Hill Road, First Street changes to **Sierra Vista**, which serves as a two-lane neighborhood collector.
- **Springhill Road** is a two-lane collector street extending northwesterly from its intersection from Pleasant Hill Road, providing access to Springhill Elementary School and a residential area. The east leg of the Springhill Road/Pleasant Hill Road intersection is **Quandt Road**, a two-lane collector extending easterly to provide access to a residential area.



Source: TJKM, 2014.

Figure 4.9-1
Revised Project Site Vicinity

- **Brown Avenue** is a two-lane collector street that runs north-south, connecting Deer Hill Road and Mount Diablo Boulevard via an underpass at Highway 24. North of Deer Hill Road, Brown Avenue splits into two 2-lane neighborhood collectors: Miller Road and Brown Avenue (private).
- **Reliez Valley Road** is a two-lane collector street extending northerly from its intersection with Pleasant Hill Road, providing access to residential areas westerly of Pleasant Hill Road and Taylor Boulevard, and connecting with Alhambra Valley Road in unincorporated area near the City of Martinez.

Collector and local streets in the study area also include the following two-lane roadways that mostly serve residential areas: Acalanes Avenue, Green Valley Drive, Rancho View Drive, and Old Tunnel Road.

Study Area Intersections

The study area used in the TJKM TIA includes the following study intersections:

- Pleasant Hill Road/Rancho View Drive (Signalized)
- Pleasant Hill Road/Green Valley Drive (Signalized)
- Pleasant Hill Road/Reliez Valley Road (Signalized)
- Pleasant Hill Road /Springhill Road – Quandt Road (Signalized)
- Pleasant Hill Road/Deer Hill Road – Stanley Boulevard (Signalized)
- Pleasant Hill Road/Mount Diablo Boulevard/Highway 24 Eastbound On-Ramp (Signalized)
- Pleasant Hill Road/ Highway 24 Eastbound Off-Ramp – Old Tunnel Road (Signalized)
- Deer Hill Road/Brown Avenue (Unsignalized)
- Deer Hill Road/First Street – Sierra Vista Way (Signalized)
- Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive (Signalized)
- Pleasant Hill Road/Project Driveway (Proposed – Unsignalized)
- Deer Hill Road/Soccer Drop-Off Driveway (Proposed – Unsignalized)
- Deer Hill Road/Dog Park Driveway (Proposed – Roundabout)

All of the study intersections are outside of the "Downtown," as defined in the Lafayette General Plan Circulation Chapter.

The key study intersection adjacent to the Project site is Pleasant Hill Road/Deer Hill Road – Stanley Boulevard, which is signalized. The traffic signal timing sequence provides separate green signal phases for left/U-turns from Pleasant Hill Road, eastbound traffic on Deer Hill Road, and westbound traffic on Stanley Boulevard. On southbound Pleasant Hill Road approaching the intersection, the curb lane is a shared bike lane from which right turns are permitted. The existing geometry of the southwest corner curb and resulting southbound roadway width on Pleasant Hill Road south of the intersection constrains the available radius for U-turns from northbound Pleasant Hill Road, which prevents long pickup trucks and larger trucks from completing U-turns in one continuous movement. The resulting stopping and backing up movements contribute to traffic delay and queues at the intersection.

Existing Traffic Volumes

Weekday AM (7:00 a.m. to 9:00 a.m.), school dismissal PM (2:00 to 4:00 p.m.) and commute PM (4:00 p.m. to 6:00 p.m.) peak turning movement counts were collected mostly in May 2011 or early December 2011, with schools in regular session, at study intersections #1 to #8, with the date exceptions at the Springhill Road/Pleasant Hill Road intersection (#4) as shown in Table 4.9-6. In addition, school dismissal p.m. (2:00 to 4:00 p.m.) counts were collected at the Pleasant Hill Road/Deer Hill Road – Stanley Boulevard (#5) intersection in early December 2011. At the two more westerly intersections of Deer Hill Road - at First Street (#9) and at the Highway 24 westbound ramps (#10) – counts were collected in September 2009. Counts for all three peak periods were also collected in early December 2011 at those Pleasant Hill Road junctions with Highway 24 ramps that are uncontrolled merging or exiting movements. The existing peak hour turning movement volumes, as well as lane geometries and traffic controls at the study intersections, are shown in Figure 4.9-2. Note that U-turn volumes are shown separately from left-turn volumes only at those study intersections where a substantial number of U-turns were counted, and are otherwise included in the left-turn volumes shown at the intersections where U-turns are less frequent.

Existing Intersection Level of Service

Existing levels of service for each study intersection were calculated based on the existing intersection geometry, traffic control, and AM, school dismissal PM, and commute PM peak hour traffic volumes. Table 4.9-7 illustrates the results of the level of service analysis using the HCM 2000 methodology for the study intersections under existing conditions. Under existing conditions, all of the signalized study intersections are operating within acceptable City level of service standards with the exception of the following two:

- Deer Hill Road – Stanley Boulevard/Pleasant Hill Road: LOS F during the AM peak hour, LOS E during the PM peak hour. Note, however, that this intersection is not subject to an intersection LOS standard, but is part of the Pleasant Hill Road corridor north of Highway 24 that is subject to the Delay Index criteria (per General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines).
- Deer Hill Road/ Highway 24 Westbound Ramps – Laurel Drive: Poor LOS D, AM and PM peaks.

During the AM peak hour, traffic on southbound Pleasant Hill Road backs up from the intersection at Deer Hill Road – Stanley Boulevard and the queue extends past the intersection at Green Valley Drive. In effect, the LOS F conditions at the Deer Hill Road – Stanley Boulevard intersection also occur upstream at the Springhill Road/Quandt Road, Reliez Valley Road, and Green Valley Drive intersections, which impacts southbound Pleasant Hill Road traffic and other traffic movements that conflict with southbound traffic at each intersection. For example, at the Springhill Road – Quandt Road intersection, left turns from northbound Pleasant Hill Road, left turns and through movements from westbound Quandt Road, and all traffic movements from eastbound Springhill Road, as well as southbound movements stuck in the queue, experience long delays and queues. However, the City's intersection level of service standards are based on the level of service results calculated at each intersection individually, which are the results shown in Table 4.9-7 for existing conditions and presented subsequently in this analysis for the other analysis scenarios. This

TABLE 4.9-6 DATES OF PEAK PERIOD INTERSECTION COUNTS

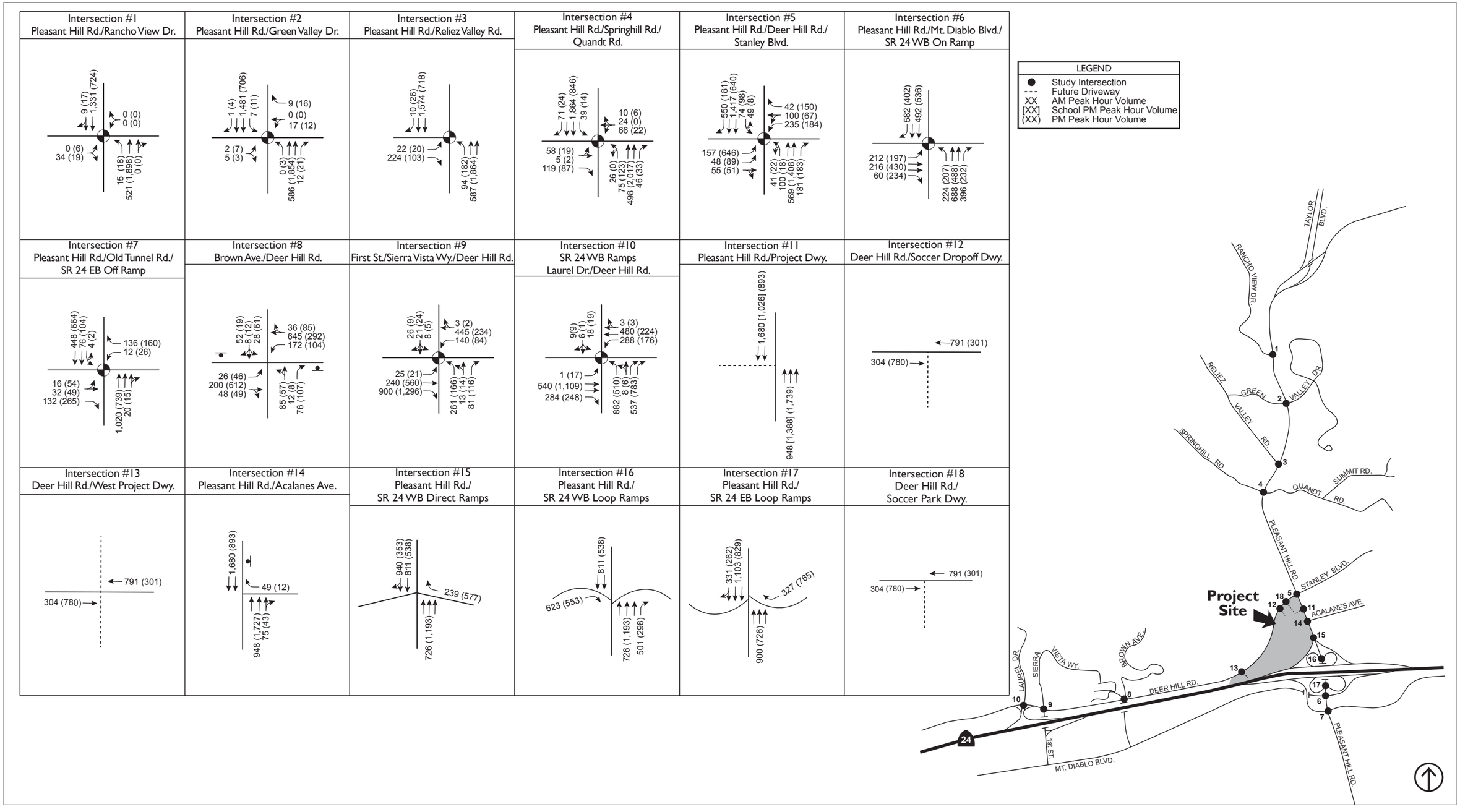
Intersection	Count Date		
	AM Peak	School PM Dismissal	PM Peak
1. Rancho View Dr./Pleasant Hill Rd.	May 2011	December 2011	May 2011
2. Green Valley Dr./ Pleasant Hill Rd.	May 2011	December 2011	May 2011
3. Reliez Valley Rd./Pleasant Hill Rd.	May 2011	December 2011	May 2011
4. Springhill Rd. – Quandt Rd./Pleasant Hill Rd.	January 2012	December 2011	September 2010
5. Deer Hill Rd. – Stanley Blvd./Pleasant Hill Rd.	December 2011	December 2011	December 2011
6. Mount Diablo Blvd./ Pleasant Hill Rd.	May 2011	December 2011	May 2011
7. State Highway 24 EB Off-Ramp/Pleasant Hill Rd.	May 2011	December 2011	May 2011
8. Deer Hill Rd./Brown Ave.	May 2011	(no count)	May 2011
9. Deer Hill Rd./First Street – Sierra Vista Way	September 2009	September 2009	September 2009
10. Deer Hill Rd./State Highway 24 Westbound Ramps – Laurel Dr.	September 2009	September 2009	September 2009

Note: At Intersection #8, AM and PM commute peaks provide worst-case results.
Source: TJKM, 2012.

TABLE 4.9-7 EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY

Analysis Intersection	Traffic Control	AM Peak Hour		School PM Dismissal		PM Peak Hour	
		Delay (sec/veh)[a]	LOS[b]	Delay (sec/veh)[a]	LOS[b]	Delay (sec/veh)[a]	LOS[b]
1. Rancho View Dr./Pleasant Hill Rd.	Signalized	7.3	A	6.9	A	5.3	A
2. Green Valley Dr./Pleasant Hill Rd.	Signalized	5.8	A	7.7	A	4.9	A
3. Reliez Valley Rd./Pleasant Hill Rd.	Signalized	24.5	C	8.5	A	9.8	A
4. Springhill Rd. – Quandt Rd./Pleasant Hill Rd.	Signalized	21.2	C	10.6	B	12.9	B
5. Deer Hill Rd. –Stanley Blvd./Pleasant Hill Rd.	Signalized	189.7	F[c]	39.7	D	58.5	E[c]
6. Mount Diablo Blvd. – State Highway 24 EB On-Ramp/Pleasant Hill Rd.	Signalized	14.7	B	16.7	B	16.9	B
7. State Highway 24 EB Off-Ramp – Old Tunnel Rd./Pleasant Hill Rd.	Signalized	13.2	B	15.0	B	16.2	B
8. Deer Hill Rd./Brown Ave.	Unsignalized	**145.5**	**F**	NA	NA	**271.1**	**F**
9. Deer Hill Rd./First Street – Sierra Vista Way	Signalized	13.4	B	11.3	B	14.4	B
10. Deer Hill Rd./State Highway 24 Westbound Ramps -Laurel Dr.	Signalized	**46.6**	**D**	35.7	D	**45.3**	**D**

Notes: **Bold** indicates unacceptable operational conditions based on applicable City standards. For signalized and all-way stop controlled intersections, Delay / LOS is for overall intersection. For unsignalized one- and two-way stop controlled intersections, Delay / LOS is for critical minor stop-controlled approach. NA=Not analyzed. At Intersection #8, AM and PM commute peaks provide worst-case results.
a. Delay = Average control delay per vehicle in seconds (sec/veh).
b. LOS = Level of Service.
c. Intersection LOS standard does not apply; Delay Index is the applicable standard for Pleasant Hill Road north of SR 24 per Lafayette General Plan.
Source: TJKM, 2012.



Source: TJKM, 2014.

Figure 4.9-2
Existing Traffic Volumes, Lane Geometry, and Controls

evaluation standard is appropriate because the actual traffic capacity constraint, or bottleneck, occurs at a single intersection. Although the bottleneck backs up traffic into upstream intersections, any capacity-increasing improvement or mitigation would need to address the actual bottleneck location to be effective, because capacity increases at upstream locations would not relieve that bottleneck. In the case of southbound Pleasant Hill Road during the AM peak, the Deer Hill Road – Stanley Boulevard intersection is the actual bottleneck (LOS F) and capacity-increasing improvements at that intersection would improve traffic flow, while such improvements at the upstream intersections such as Springhill Road – Quandt Road, would be ineffective.

At the only existing unsignalized study intersection, the northbound and southbound stop-controlled minor approaches on Brown Avenue at Deer Hill Road currently operate at LOS F during the AM and PM peak hours. The California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant is met for both peak hours under existing conditions.

Pleasant Hill Road Corridor Delay Index Results

The Pleasant Hill Road corridor north of Highway 24, a CCTA-designated Route of Regional Significance, is analyzed using the Delay Index Methodology (per General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines). Travel time and speed observations conducted in 2013 for an update of the Lamorinda Action Plan were used to calculate peak hour peak direction Delay Indexes on Pleasant Hill Road north of Highway 24 for the Existing Conditions No Project Scenario. The Delay Index measures travel congestion and is expressed as the ratio of time required to travel between two points during the peak hour (the congested travel time) versus the time required during uncongested off-peak times. A Delay Index of 2.0, which is the acceptable standard of significance for peak hour peak direction travel on Pleasant Hill Road north of Highway 24, means that congested travel time is twice as long as during an off-peak travel time.

For Pleasant Hill Road between Highway 24 and Rancho View Drive, the Delay Indexes in the Existing Conditions No Project scenario were calculated for the southbound direction during the AM peak hour and for the northbound direction during the PM peak hour, and are summarized in Table 4.9-8. As noted in the table, Pleasant Hill Road operates with an acceptable Delay Index of less than 2.0 for southbound traffic in the AM peak hour and northbound traffic in the PM peak hour under the Existing Conditions No Project scenario.

Existing Pleasant Hill Road Conditions

Existing conditions along the Pleasant Hill Road study corridor were observed, and the existing conditions model was calibrated in Simtraffic and CORSIM to replicate observed/measured field conditions such as travel time, delay, queues, and saturation flow rates for both directions on Pleasant Hill Road for all three peak periods.

TABLE 4.9-8 PLEASANT HILL ROAD DELAY INDEX – EXISTING CONDITIONS

	Travel Time (Minutes)		Delay Index	
Scenario	AM Southbound	PM Northbound	AM Southbound	PM Northbound
Existing No Project	3.45	3.74	1.3	1.4

Source: TJKM, 2014.

During the AM peak hour, traffic on southbound Pleasant Hill Road backs up from the intersection at Deer Hill Road – Stanley Boulevard and the queue extends past the intersection at Green Valley Drive, as described in more detail in the previous section regarding intersection level of service. During the commute PM peak hour, traffic on northbound Pleasant Hill Road backs up from the intersection at Deer Hill Road – Stanley Boulevard and the queue extends past the Acalanes Avenue intersection.

4.9.1.2 CHANGES IN THE REVISED PROJECT RELATED TO TRAFFIC

The Revised Project substantially reduces the number of units proposed on site compared to that evaluated in the Certified EIR, but includes recreational uses that were not included in the Terraces of Lafayette Project. The Revised Project includes development of 44 single-family units, a 3-acre dog park, multi-use sports field, and 6 acres of city park uses. While the residential trips would be reduced under the Revised Project, the recreational uses would add trips that were not previously evaluated.

The Revised Project consists of constructing 44 single-family detached homes, a soccer field, and approximately six acres of park area on the Project site. In addition, the Revised project also includes the construction of a dog park with 1.5 acres of enclosed dog play area north of Deer Hill Road adjacent to the proposed residential component. Whereas the Terraces of Lafayette Project included two driveways on Deer Hill Road and one driveway on Pleasant Hill Road, vehicle access to the Revised Project site under the Revised Project would be provided through four locations described below:

- One limited-access, right-in/right-out-only driveway on Pleasant Hill Road south of Deer Hill Road would provide access to a proposed parking lot serving the city park and soccer field components (Intersection #11). It is anticipated that any vehicles entering this parking lot from the limited-access driveway on Deer Hill Road would exit onto southbound Pleasant Hill Road from this driveway.
- One limited-access, right-in-only driveway on Deer Hill Road at the easterly portion of the Project site (Intersection #18), which will provide access to the parking lot mentioned above. The parking lot would include 78 marked spaces. Vehicles will be prohibited from exiting the Project site at this driveway.
- One full-access driveway on Deer Hill Road west of the limited-access driveway would provide access to the proposed soccer field drop-off area and additional disabled access parking spaces (Intersection #12).

- Two full-access driveways on Deer Hill Road at the westerly portion of the Revised Project site would provide access to the residential and dog park components of the Revised Project. These driveways would function as the northern (dog park) and southern (residential) legs of a proposed roundabout on Deer Hill Road (Intersection #13).

4.9.1.3 STANDARDS OF SIGNIFICANCE

The Revised project would result in a significant transportation and traffic impact if it would:

1. Cause signalized "downtown" intersection (as identified in the General Plan) operations to deteriorate from LOS A, B, C, or D to LOS E or F.
2. Cause operations at a signalized intersection "outside downtown" to deteriorate from LOS A, B, C, or "good" D to "poor" LOS D or to LOS E or F, except for those signalized intersections on Pleasant Hill Road described in the Regional Routes of Significance Delay Index Methodology section, which are subject to the Delay Index criteria below (per General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines). "Good" LOS D is defined as 35 to 45 seconds of average control delay per vehicle. "Poor" LOS D is defined as 45 to 55 seconds of average delay.
3. Cause the overall level of service at an unsignalized all-way stop control intersection or roundabout to degrade from LOS D or better to LOS E or F.
4. Cause the level of service at an unsignalized one- or two-way stop control intersection to degrade from LOS E or better for the worst movement from the side street, to LOS F, where the intersection also meets at least one warrant for the installation of a traffic signal.
5. Cause a Delay Index to increase from 2.0 or less to exceed 2.0 for the peak hour peak direction on Highway 24 or Pleasant Hill Road.
6. Cause delay to increase by five or more seconds at an intersection, or the Delay Index to increase by 0.05 or more for a roadway, where the subject intersection or roadway is operating below the acceptable standard that is applicable, as outlined above.
7. Substantially increase hazards due to a design feature (e.g. sharp curves; intersections or driveways with restricted visibility, or causing unacceptable weaving conditions such as increasing travel time by 10 percent or more and by five seconds or more on the weaving segment, etc.).

An Initial Study was prepared for the Revised Project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the Revised Project would result in a less-than-significant impact for the following significance standards and therefore, the following are not discussed in this chapter.

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

4.9.1.4 TRAFFIC AND CIRCULATION IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to transportation and traffic.

This analysis evaluates the following traffic scenarios:

- **Existing plus Revised Project Conditions.** This scenario is identical to Existing Conditions, but with the addition of traffic expected to be generated by the Revised Project and the connection of proposed driveways to the adjacent roadways.
- **Cumulative Year 2030 No Project Conditions.** This scenario is based on projecting Existing Conditions traffic volumes 20 years into the future using growth factors derived from the latest CCTA travel demand model for Year 2035. This model includes future land use and transportation network assumptions for the entire county, including Lafayette, Pleasant Hill, Martinez, Walnut Creek, Moraga, and unincorporated areas. Because the CCTA model assumes development in the Project site area would generate traffic approximately similar in magnitude to traffic generated by the Revised Project, this scenario subtracts from the Year 2030 volume projections the traffic expected to be generated by the Revised Project to provide the Cumulative Year 2030 No Project Conditions baseline.
- **Cumulative Year 2030 plus Revised Project Conditions.** This scenario is identical to Cumulative Year 2030 No Project Conditions, but with the addition of traffic expected to be generated by the Revised Project and the connection of proposed driveways to the adjacent roadways.

Existing plus Revised Project Conditions

This scenario uses the Existing Conditions scenario as a baseline, but adds traffic generated by the Revised Project and evaluates the Revised Project's potential impacts. The purpose of the Existing plus Revised Project Conditions traffic analysis is to show the potential near-term effects of a full buildout of the Revised Project for CEQA purposes.

Existing plus Revised Project Trip Generation

TJKM estimated Revised Project trip generation based on the trip generation rates established via a survey of representative dog parks and soccer fields, as well as data presented in *ITE Trip Generation*, 9th Edition and the guidelines in the ITE *Trip Generation Handbook* for the park and single-family detached housing components. No trip reductions were applied because the site is not within reasonable walking distance of public transit services or significant complementary land uses, based on published research data.[5] This is a slightly conservatively high assumption for project trip generation, given that the recreation facilities provide amenities within easy walking distance of the residential component, potentially reducing the portion of residential project-generated vehicle trips for recreation purposes.

[5] "Reasonable walking distance" in the published data is typically considered to range from at least ¼-mile to ½-mile.

ITE's *Trip Generation* manual does not presently provide trip rates for dog parks, and the proposed single soccer field is not within the range of the number of soccer fields at the sites surveyed for the data provided in *Trip Generation*. As a result, TJKM conducted trip generation surveys at three dog parks and a single soccer field site to establish daily, AM peak hour, and PM peak hour rates to apply to the proposed dog park and soccer field components. Additional details regarding the trip generation surveys and derived trip rates for the proposed alternative project is available in Appendix L.

Table 4.9-9 below summarizes the Revised Project trip generation results. The Revised Project is expected to generate 1,224 daily trips, with 82 trips occurring during the AM peak hour (34 inbound and 48 outbound), and 175 trips occurring during the PM peak hour (95 inbound and 80 outbound).

Existing plus Revised Project Trip Distribution and Assignment

Trip distribution is a process that determines in what proportion vehicles would travel between a project site and various destinations outside the project study area. The process of trip assignment determines the various routes that vehicles would take from the project site to each destination using the calculated trip distribution.

Trips that would be generated by the Revised Project were assigned to the adjacent roadway network based on the land use distribution and prevailing traffic patterns in the surrounding area, as well as the location of freeway ramp connections and the proposed access driveways. TJKM prepared separate distributions for the home-based trips and the recreation-based trips, due to the likely differences in trip origins and destinations for the two land uses, and the location of the proposed driveways which will separately provide access to the individual proposed land uses. The resulting percentage directional distributions and assignment of project-generated trips to the adjacent roadways are shown in Figure 4.9-3. These assigned trips were added to Existing Conditions traffic volumes to generate the Existing with Revised Project traffic volumes shown in Figure 4.9-4.

Existing plus Revised Project Intersection Lane Geometry and Traffic Controls

Figure 4.9-4 also shows the intersection lane geometries and traffic controls assumed in the analysis of Existing with Revised Project Conditions. The key assumptions are summarized as follows:

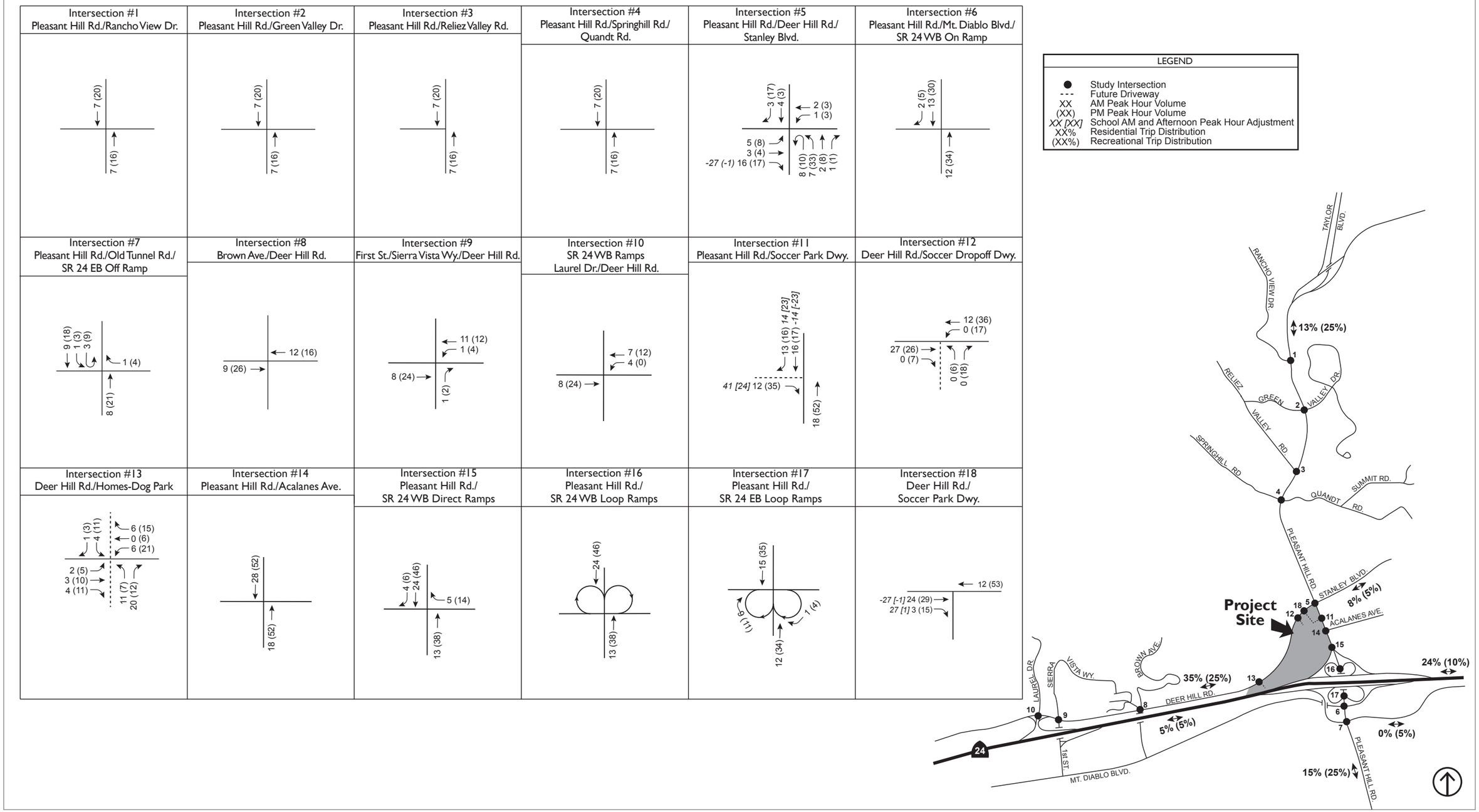
- At the Dear Hill Road/Soccer Drop-Off driveway (Intersection #12) and Pleasant Hill Road (Intersection #11) driveways, TJKM recommends that stop signs controlling traffic exiting the driveways shall be required as Mitigation Measure TRAF-9, as assumed in the traffic analysis.
- At the Soccer Field/Park parking lot driveway (Intersection #18) on Deer Hill Road, proposed access would be limited to right turns into the site from the eastbound direction.
- The Pleasant Hill Road driveway (Intersection #11) would provide right-in/right-out-only access at southbound Pleasant Hill Road, where all vehicles leaving the Project site from the soccer/park parking lot would exit. Left turns into or out of the site to/from northbound Pleasant Hill Road would be prohibited by a raised median.

TRANSPORTATION AND TRAFFIC

TABLE 4.9-9 SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

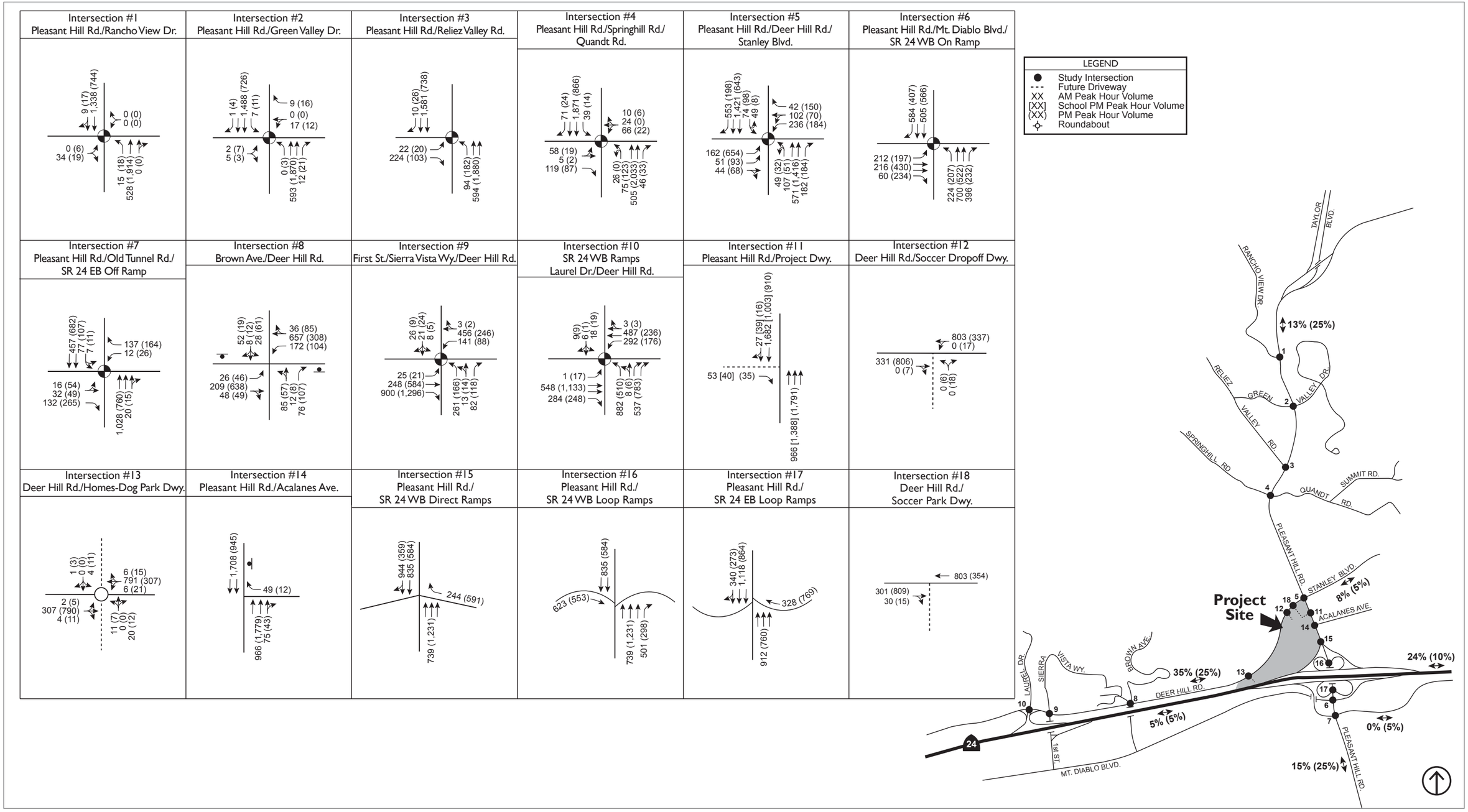
		Daily		AM Peak Hour					PM Peak Hour				
Land Use (ITE Code)	Size	Rate	Trips	Rate	In:Out %	In	Out	Total	Rate	In:Out %	In	Out	Total
Single-Family Detached Housing (210)[a,b]	44 DUs	11.22	493	0.93	25:75	10	31	41	1.16	63:37	32	19	51
Dog Park[c]	1 Park	265	265	13	60:40	8	5	13	34	59:41	20	14	34
Soccer Field[d]	1 Field	196	196	1.12	57:43	1	0	1	68	46:54	31	37	68
City Park (411)[a,e]	6 Acres	45	270	4.5	56:44	15	12	27	3.5	57:43	12	10	22
Total			**1,224**			**34**	**48**	**82**			**95**	**80**	**175**

Notes: DU = Dwelling Units
a. Source: ITE Trip Generation, 9th Edition.
b. Rates for land use code 210 calculated based on Total trips (T) from regression equation divided by Size (DU):
Daily: Ln(T) = 0.92Ln(DU) + 2.72
AM Peak: T = 0.70(DU) + 9.74
PM Peak: Ln(T) = 0.90Ln(DU) + 0.51
c. Source: TJKM trip generation surveys of dog parks (described in Appendix L).
d. Source: Daily and PM peak hour per TJKM survey; AM peak hour per ITE land use code 488.
e. The daily rate for land use code 411 is estimated based on a factor of the trip generation rate during the weekday AM peak hour of adjacent street traffic (4.5 x 10 = 45 daily trips per acre).
Source: TJKM, 2014.



Source: TJKM, 2014.

Figure 4.9-3
Revised Project Trip Distribution and Assignment



Source: TJKM, 2014.

Figure 4.9-4

Existing plus Revised Project Traffic Volumes, Lane Geometry, and Controls

- Intersection #13 would be constructed as a single-lane, yield-control roundabout with the north and south legs providing access to/from the dog park and residential component, respectively.

Existing plus Revised Project Intersection Level of Service

Table 4.9-10 illustrates the results of the level of service analysis for the study intersections under Existing plus Revised Project Conditions. Detailed level of service calculations are contained in Appendix L.

Under Existing plus Revised Project Conditions, with the addition of Revised Project traffic, all signalized intersections are expected to continue operating under acceptable City LOS standards, except the Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive intersection that already operates at an unacceptable LOS under Existing Conditions. This intersection would continue to operate at Poor LOS D during the AM and PM peak hours, with delay increasing by 0.7 seconds and 1.3 seconds, respectively. Because the Revised Project would increase delay by less than five seconds, the result would be a *less-than-significant* impact.

The Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection would also continue operating at LOS F during the AM peak hour, with delay increasing by 26.2 seconds as a result of the Revised Project, and at LOS E during the PM peak hour with delay increasing by 3.6 seconds as a result of the Revised Project. The Revised Project would increase delay by more than five seconds at an intersection operating at LOS F during the AM peak hour. However, this is considered a less-than-significant impact based on the significance thresholds for this Supplemental EIR that eliminate consideration of intersection LOS on Pleasant Hill Road north of Highway 24, in accordance with General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines. This intersection is not subject to an intersection LOS standard; it is a Route of Regional Significance that is subject to the Delay Index criteria.

The unsignalized proposed driveway intersections would operate at LOS C or better, which is acceptable for these intersections. The Deer Hill Road/Homes/Dog Park intersection, which would be constructed as a roundabout, would operate at LOS A during the AM and PM peak hours. In addition, the Pleasant Hill Road/Project driveway would operate at LOS B with an average control delay of 10.3 seconds during the school PM peak hour. However, at the only existing unsignalized study intersection, the northbound and southbound stop-controlled minor approaches on Brown Avenue at Deer Hill Road would continue operating at an unacceptable LOS F, with delay increases of 13 seconds during the AM peak hour and 54.6 seconds during the PM peak hour. The California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant would be met for both peak hours under both Existing and Existing plus Revised Project Conditions. The Revised Project would increase delay by more than five seconds at an intersection operating below the acceptable standard, resulting in a s*ignificant* impact (Impact TRAF-1).

To mitigate the impact at the Deer Hill Road/Brown Avenue intersection, the Project sponsor shall share with the City the cost to install one of the following mitigation measures at this intersection:

TABLE 4.9-10 EXISTING PLUS REVISED PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

		AM Peak Hour		PM Peak Hour	
#	Intersection	Delay	LOS	Delay	LOS
1	Pleasant Hill Road/Rancho View Drive	7.4	A	5.3	A
2	Pleasant Hill Road/Green Valley Drive	5.8	A	4.9	A
3	Pleasant Hill Road /Reliez Valley Road	24.6	C	9.9	A
4	Pleasant Hill Road /Springhill Road – Quandt Road	21.3	C	13.0	B
5	Pleasant Hill Road/Deer Hill Road – Stanley Boulevard	215.9	F[a]	62.1	E[a]
6	Pleasant Hill Road/Mount Diablo Boulevard/Highway 24 Eastbound On-Ramp	14.9	B	16.8	B
7	Pleasant Hill Road/ Highway 24 Eastbound Off-Ramp – Old Tunnel Road	13.3	B	18.5	B
8	Deer Hill Road/Brown Avenue	**158.5**	**F**	**325.7**	**F**
9	Deer Hill Road/First Street – Sierra Vista Way	13.7	B	14.9	B
10	Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive	**51.5**	**D**	**46.6**	**D**
11	Pleasant Hill Road/Project Driveway	10.4	B	9.2	A
12	Deer Hill Road/Soccer Drop-Off Driveway	0.0	A	19.2	C
13	Deer Hill Road/Homes - Dog Park Driveway	8.1	A	8.5	A

Notes: LOS = Level of Service. Signalized, all-way stop-controlled, and roundabout intersections – Delay/LOS is for overall intersection. Unsignalized one- and two-way stop-controlled intersections – Delay/LOS is for critical minor stop-controlled approach. **Bold** indicates unacceptable operational conditions based on applicable City standards.
a. Intersection LOS standard does not apply; Delay Index is the applicable standard for Pleasant Hill Road north of SR 24 per Lafayette General Plan.
Source: TJKM, 2014.

- The first mitigation option is to install a traffic signal as part of the Project. The traffic signal equipment shall include an emergency vehicle preemption system (Opticom), which would allow emergency response vehicles approaching the signalized intersection to activate a green signal for their travel direction. The Highway 24 freeway overpass structures on Brown Avenue could obstruct the Opticom activation device on responding emergency vehicles headed northbound on Brown Avenue from Mount Diablo Boulevard toward Deer Hill Road, which could substantially reduce the effectiveness of the traffic signal preemption. To avoid this problem, the traffic signal equipment shall include advance detection devices for the Opticom system as needed to assure effective traffic signal preemption for responding emergency vehicles on northbound Brown Avenue. With signalization, the Deer Hill Road/Brown Avenue intersection would operate at LOS B during the AM and PM peak hours under Existing plus Revised Project Conditions.

- The second mitigation option is to redesign this intersection as a roundabout, which would improve the approach LOS for the minor approach volumes at this intersection. A properly designed roundabout would adequately accommodate emergency response vehicles. A roundabout would also benefit this location by: 1) creating consistency in traffic control devices on the Deer Hill Road corridor, given the proposed roundabout to the east at the Revised Project driveway; 2) providing effective traffic calming in a corridor with reported speed concerns; 3) enhancing the safety of pedestrian crossings at the intersection; and 4) being more compatible with the less-urban character of the area. With a roundabout, the Deer Hill Road/Brown Avenue intersection would operate at LOS B during the AM peak hour and LOS A during the PM peak hour under Existing plus Revised Project Conditions.

For the Pleasant Hill Road corridor, SimTraffic simulation results were reviewed by TJKM to supplement the intersection level of service results. SimTraffic simulation results for Existing plus Project Conditions prepared for the Certified EIR were reviewed and compared with the Existing plus Revised Project analysis presented above to supplement the intersection LOS results. During the AM peak hour, traffic on southbound Pleasant Hill Road that backs up from the intersection at Deer Hill Road – Stanley Boulevard would extend the queue further past the intersection at Green Valley Drive with the addition of Revised Project traffic. In effect, as described for Existing Conditions, the LOS F conditions at the Deer Hill Road – Stanley Boulevard intersection would also occur upstream at the Springhill Road/Quandt Road, Reliez Valley Road, and Green Valley Drive intersections, which impacts southbound Pleasant Hill Road traffic and other traffic movements that conflict with southbound traffic at each intersection. However, the City's intersection LOS methods described in the previous Level of Service Analysis Methodology section are based on the LOS results calculated at each individual intersection. During the PM peak hour commute, traffic queues would continue to extend from the Pleasant Hill Road/Deer Hill Road-Stanley Boulevard intersection past the Acalanes Avenue intersection.

Although not required as mitigation, the LOS F delay at the Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection could be reduced somewhat with roadway widening to add a third lane for southbound through traffic on Pleasant Hill Road. A potential configuration would provide a third lane for southbound through traffic and a full-lane-width right-turn lane on southbound Pleasant Hill Road at the Deer Hill Road intersection, along with a standard Class II bike lane, replacing the existing southbound curb lane that is shared by right-turn-only traffic and bicycles approaching the intersection. The additional southbound lanes would start at least 150 feet north of Deer Hill Road and extend south along the entire project frontage on Pleasant Hill Road to become a right-turn-only lane for the on-ramp to westbound Highway 24. However, widening for the potential lane configuration would also require dedication of additional property along the west side of Pleasant Hill Road to allow for a Class II bike lane and maintain existing curb parking and a future bus stop along the west curb. The potential roadway widening would increase the pedestrian crossing distance on the Pleasant Hill Road crosswalk at the Deer Hill Road – Stanley Boulevard signal. The additional capacity would also be inconsistent with the Lamorinda Action Plan's Gateway Constraint Policy, which includes measures to maintain the existing number of travel lanes and meter traffic flow on Pleasant Hill Road.

Existing plus Revised Project Routes of Regional Significance Delay Index Results

For Pleasant Hill Road between Highway 24 and Rancho View Drive, the Delay Indexes in the Existing plus Revised Project Conditions scenario were calculated for the southbound direction during the AM peak hour and for the northbound direction during the PM peak hour, and are summarized in Table 4.9-11. As noted in the table, Pleasant Hill Road is expected to operate with an acceptable Delay Index of less than 2.0 for southbound traffic in the AM peak hour and northbound traffic in the PM peak hour under Existing plus Revised Project Conditions. Because the Delay Index would remain acceptable with the Revised Project, the result would be a *less-than-significant* impact.

TABLE 4.9-11 EXISTING PLUS REVISED PROJECT DELAY INDEX – PLEASANT HILL ROAD

	Travel Time (Minutes)		Delay Index	
Scenario	AM Southbound	PM Northbound	AM Southbound	PM Northbound
Existing Conditions	3.45	3.74	1.31	1.42
Existing plus Revised Project	3.70	3.87	1.41	1.47

Source: TJKM, 2014.

Existing plus Revised Project Left-Turn Queues

Left-turn queue lengths on westbound Deer Hill Road at the Soccer Drop-Off driveway and for the northbound left-turn at Pleasant Hill Road/Deer Hill Road – Stanley Boulevard were also analyzed using Synchro results for Existing plus Revised Project Conditions. For the northbound left-turn at the Pleasant Hill Road /Deer Hill Road – Stanley Boulevard intersection, peak estimated 95th-percentile left-turn queue lengths of 207 feet and 133 feet would occur with the addition of Revised Project traffic during the AM and PM peak hours, respectively. However, these left-turn queues would be adequately accommodated by the existing 250-foot storage lane. The additional Revised Project traffic used for this analysis includes U-turns from northbound to southbound Pleasant Hill Road to enter the soccer/park parking lot, and left turns to Deer Hill Road to access the soccer drop-off, dog park, and homes driveways, as well as additional conflicting Revised Project traffic on southbound Pleasant Hill Road headed toward the recreation facilities and homes.

At the proposed Soccer Drop-Off driveway on Deer Hill Road, the estimated 95th-percentile left-turn queue lengths during the AM and PM peak periods would be no more than one car length. Although a westbound left-turn storage lane is not proposed at this intersection, vehicles stopped in the travel lane waiting to make the left-turn should not pose a significant hazard for westbound through vehicles; the positive grade approaching the driveway will adequately limit westbound approach speeds, and adequate sight-distance between queuing vehicles and traffic approaching from both directions will be available (see next section).

Existing plus Revised Project Driveway Sight-Distance and Safety

Access at the Pleasant Hill Road driveway is proposed to be limited to right-in/right-out, as left turns out of and into the site to/from northbound Pleasant Hill Road would be prohibited by a raised median. With this configuration, turning movements at the driveway would conflict with only southbound Pleasant Hill Road traffic. Visibility of the driveway along southbound Pleasant Hill Road is unobstructed for at least 750 feet, providing more than adequate sight-distance. In addition, the driveway would be located approximately 180 feet south (measured from the south side) of the intersection at Deer Hill Road – Stanley Boulevard, providing more than adequate sight-distance for vehicles turning onto southbound Pleasant Hill Road.

TJKM analyzed the sight-distance parameters at the proposed driveway locations on Deer Hill Road, including the two full-access driveways, as shown on Figures 4.9-5 and 4.9-6. Sight-distance analysis at the proposed Deer Hill Road driveway locations accounted for the visibility obstructions presented by the horizontal and vertical curvature of the roadway and roadside features such as adjacent hillsides and vegetation, as well as the effect of steep grades on prevailing vehicle speeds.

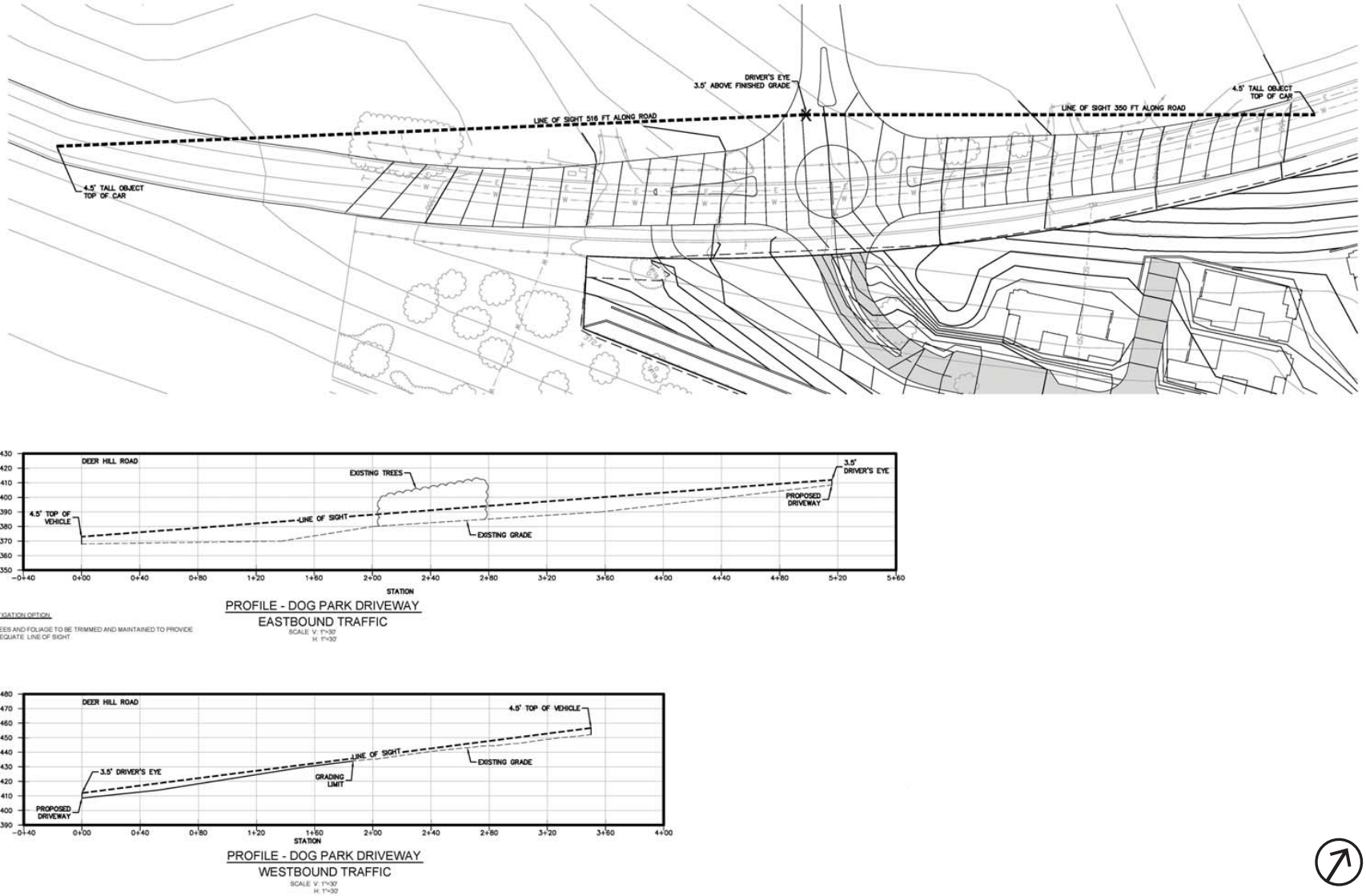
City Engineering staff confirmed that observed 85th-percentile speeds on Deer Hill Road would be used to determine the required sight-distance at the proposed driveway locations. Speed data was collected at several locations on Deer Hill Road when local schools were in regular session, including the relevant critical points for available sight-distance. Caltrans *Highway Design Manual* standards for stopping sight-distance based on speed were used to determine the required sight-distance at the Revised Project driveways for the observed 85th-percentile speed in each direction at the critical points.

Table 4.9-12 shows the results of the sight-distance analysis for the proposed Deer Hill Road full-access driveway locations.

TABLE 4.9-12 DEER HILL ROAD REVISED PROJECT DRIVEWAY SIGHT-DISTANCE

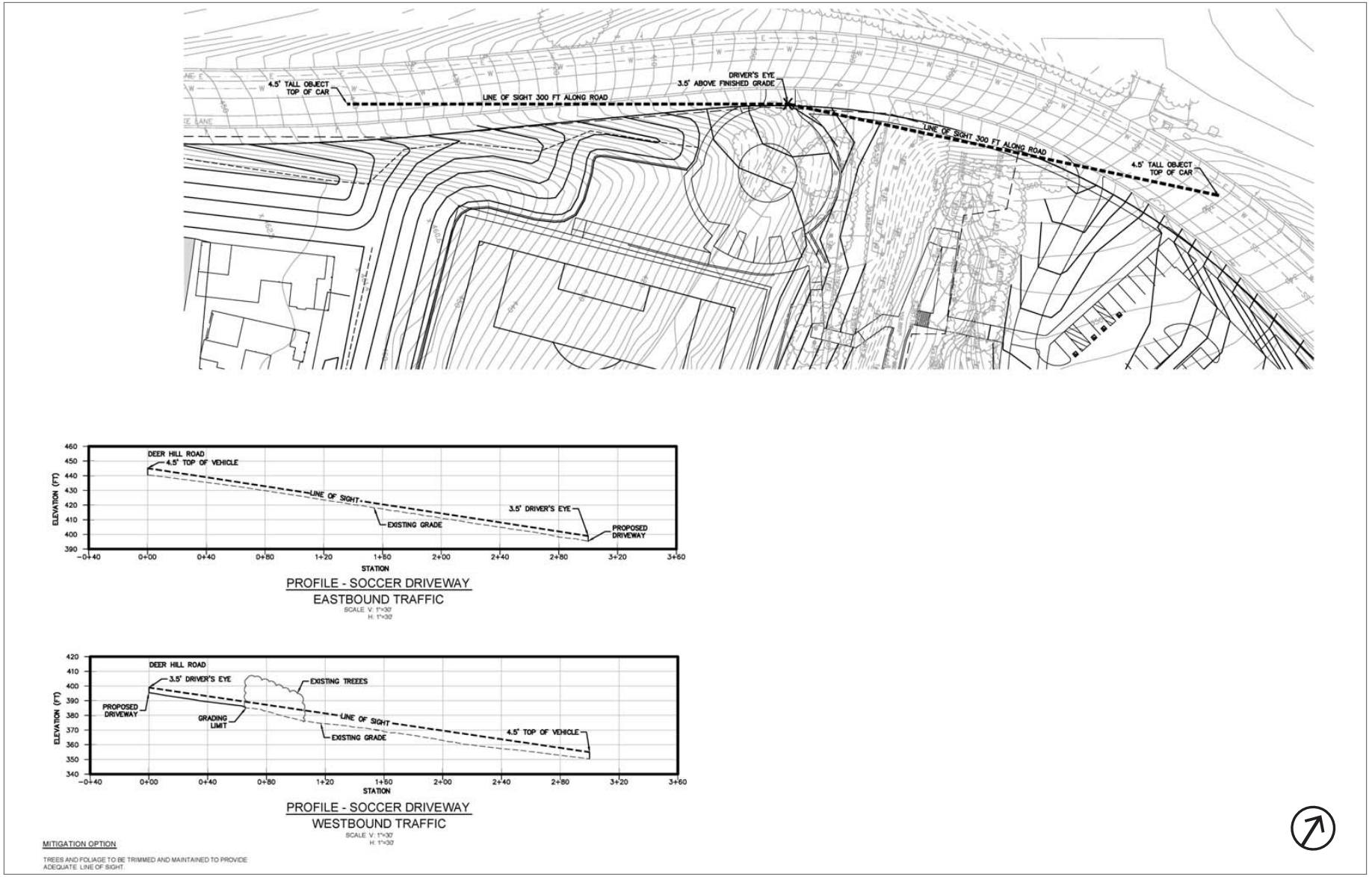
Driveway	Approach Direction	Existing 85th-Percentile Speed (mph)	Required Sight-Distance (Feet)	Available Sight-Distance (Feet)	Meets Standard?
Homes/Dog Park	Eastbound	56	516	<500	Yes[a]
	Westbound	44	350	350	Yes
Soccer Drop-Off	Eastbound	38	300	300	Yes
	Westbound	<40	300	<300[b]	No[b]

Notes:
a. Assumes a roundabout with associated design features to reduce eastbound speed.
b. Assumes no trimming of vegetation along Project site frontage east of driveway to improve sight-distance.
Source: TJKM, 2014.



Source: TJKM, 2014.

Figure 4.9-5
Sight Distance at the Homes/Dog Park Driveway on Deer Hill Road



Source: TJKM, 2014.

Figure 4.9-6
Sight Distance at the Soccer Drop-Off Driveway on Deer Hill Road

As shown in Table 4.9-12, visibility of the Homes/Dog Park driveways for westbound and eastbound traffic on Deer Hill Road will provide adequate sight-distance based on observed 85th-percentile speeds. At the dog park driveway, the proposed roundabout and design features pertaining to the cross-slope of the eastbound portion of its circulatory roadway would avoid inadequate sight-distance caused by the existing foliage by forcing eastbound drivers to reduce speeds substantially, reducing the sight-distance hazard at this driveway to a *less-than-significant* level.

However, the existing trees located approximately 75 to 100 feet east of the proposed Soccer Drop-Off driveway obstruct the line of sight of westbound vehicles for the Soccer Drop-Off driveway on Deer Hill Road. These existing trees present a higher potential for inadequate sight-distance at the proposed driveway because of roadway curvature. Because of the potential for inadequate sight-distance caused by foliage on the south side of Deer Hill Road east of the Soccer Drop-Off driveway, the existing trees would substantially increase traffic hazards, resulting in a *significant* impact (Impact TRAF-2).

Given that the Revised Project is still in the environmental review phase, much of the Project design is still in concept form, including the proposed design of the roundabout. The environmental impact analyses assume that the roundabout will be designed in accordance with all applicable engineering standards and practices to achieve the intended function. Specifically, the design must include features to address two main issues observed under prevailing conditions at the location of the proposed facility:

- Site topography, which limits visibility to potential vehicle queuing at the proposed roundabout by approaching westbound traffic;
- High prevailing speed approaching and traversing through the proposed roundabout location, partly due to the downgrade in the road from east to west.

Design features responding to these issues will include some appropriate combination of advance warning signs, object markers, flashing beacons, speed feedback signs, and/or advance dynamic warning signs to alert westbound drivers that they should reduce their speeds to a level suitable for approaching and maneuvering the roundabout. The cross-slope of the pavement within the roundabout will be designed in recognition of the new prevailing approach speeds. The design will also include street lights to provide adequate illumination of the roundabout intersection and enhance the visibility of pedestrians during hours of darkness. (The installation of street lights may result in a secondary environmental impact, which is discussed further in Section 4.1, Aesthetics and Visual Resources, of this Supplemental EIR.) At the pedestrian crossing west of the roundabout location, high-visibility crosswalk enhancements such as a rectangular rapid-flash beacon system should be considered. After the installation of the roundabout with the above recommended features, an engineering and traffic survey will be conducted to determine and post a new, legally enforceable speed limit for Deer Hill Road in this vicinity.

Implementation of the roundabout in the manner described above, which the City would require as a condition of approval of the Project, would result in a less-than-significant impact.

In addition to the full-access driveways described above, access to the soccer field/park parking lot at the southwest corner of Pleasant Hill Road and Deer Hill Road would include a driveway for only right-turn access entering from eastbound Deer Hill Road. Traffic would be prohibited from entering via a left turn from westbound Deer Hill Road or exiting in any direction at this driveway. Visibility would be adequate for eastbound Deer Hill Road traffic approaching from behind other eastbound vehicles slowing to turn right into this driveway, allowing enough distance for the vehicles approaching from behind to slow or stop safely. As such, this Project driveway does not result in a significant impact.

Existing plus Revised Project Emergency Vehicle Access

TJKM consulted with the Contra Costa County Fire Protection District (CCCFPD) to evaluate the Revised Project's impacts on emergency vehicle access. The TJKM evaluation considered the additional traffic delay impacts resulting from the Revised Project under Existing plus Revised Project Conditions, as well as the proposed configuration of proposed driveways.

A CCCFPD Fire Inspector[6] reviewed the additional traffic delay impacts of the Terraces of Lafayette Project evaluated in the Certified EIR. TJKM evaluated the Revised Project impacts based on that CCCFPD review, and comparison with the traffic delay impacts of the Revised Project. Station 15 at 3338 Mount Diablo Boulevard, approximately one-half mile west of Pleasant Hill Road, is the primary responding station for the Revised Project site vicinity. Emergency response to the Revised Project site could be routed to the proposed driveways on Deer Hill Road via Brown Avenue or Pleasant Hill Road. On the Deer Hill Road response route, the Revised Project's significant impact on delay at the Brown Avenue/Deer Hill Road intersection would result in inadequate emergency access, which would be a *significant* impact (Impact TRAF-1).

The emergency response route along Pleasant Hill Road would be northbound from Mount Diablo Boulevard, originating from Station 15. Because the response route is northbound and not southbound, the Revised Project's less-than-significant impact on PM peak-hour travel time and Delay Index for northbound Pleasant Hill Road north of Highway 24 would not significantly affect emergency access to areas of Lafayette served by Pleasant Hill Road between Highway 24 and Rancho View Drive. (Areas north of Rancho View Drive would be served adequately by Station 2, located on Geary Road at Larkey Lane.) The result would be a *less-than-significant* impact.

The CCCFPD reviewed a preliminary version of the Revised Project site plans (since superseded as described below) regarding emergency access. According to a letter from CCCFPD Fire Inspector Ted Leach dated July 21, 2014, which is included in Appendix J, that preliminary version of the Revised Project did not comply with Fire District requirements for emergency vehicle access for the following reasons:

[6] Leach, Ted. Fire Inspector, Contra Costa County Fire Protection District. Personal communication with Rich Haygood, TJKM. February 22 and March 8, 2012.

- The median at the entrance to the subdivision at the Deer Hill Road/Homes/Dog Park driveway would not allow for the minimum required unobstructed access width of 20 feet.
- Access through the proposed residences does not appear to meet the minimum required outside turning radius of 45 feet and the minimum inside turning radius of 25 feet.
- The Revised Project would include dead-end emergency apparatus access roadways in excess of 150 feet in length, which do not include required provisions for the turning around of Fire District apparatus.

Subsequent to the CCCFPD review letter, the Project applicant submitted updated Revised Project site plans (prepared by BKF and dated August 25, 2014 and August 26, 2014). The updated site plans show that:

- The median at the entrance to the subdivision at the Deer Hill Road/Home-Dog Park driveway provides lanes on both sides of the median with a minimum unobstructed access width of 12 feet, which the CCCFPD letter identified as acceptable.
- Corner radii and medians at on-site driveway intersections provide a minimum inside turning radius of 25 feet and a minimum outside turning radius of 45 feet, per CCCFPD requirements.

Detailed review of the site plan identified potential inadequate turning radii at the Deer Hill Road/Homes/Dog Park driveway roundabout. Given that the Revised Project is still in the environmental phase, the roundabout design is still in concept form; the final design will increase the corner radii and/or construct the central island and possibly the entry side of the subdivision entrance median with a traversable apron as needed to provide adequate turning radii for emergency apparatus at the roundabout. However, the lack of provisions for turning around Fire District apparatus on dead-end emergency apparatus access roadways would result in inadequate emergency access to the Project site, which is a *significant* impact (Impact TRAF-3).

Although the Soccer Field/Park driveway on Pleasant Hill Road would not be directly accessible from the northbound Pleasant Hill Road response route because left turns are prohibited by the existing raised median, the CCCFPD review of the Revised Project did not identify this as an issue. Emergency vehicle access to the soccer field and the park would be available from northbound Pleasant Hill Road via left turns at Deer Hill Road and at the Soccer Drop-Off driveway, and the resulting impact on emergency vehicle access would be *less than significant*. As an alternative that would enhance emergency vehicle access, which is not required as mitigation, TJKM recommends consideration of reconstructing a short section of the median on Pleasant Hill Road opposite the Soccer Field/Park driveway to safely and effectively obstruct left turns by the public but provide more direct emergency vehicle access, using beveled curbs or other designs that emergency vehicles can cross safely.

Existing plus Revised Project On-Site Circulation

TJKM reviewed the Revised Project site plans with regard to on-site circulation, including pedestrian and truck access, as well as parking. The vehicle circulation plan appears adequate for passenger cars and light-duty trucks. To maintain adequate sight-distance, TJKM recommends that all landscaping within 15 feet of

on-site driveway intersections, including the proposed multi-use trail crossing west of the Pleasant Hill Road driveway, shall be limited to plants with foliage no more than 30 inches at fully mature height above the closest adjacent curb elevation, or trees with canopy foliage no less than seven feet above the closest adjacent curb elevation, or other dimensions as specified by the City Engineer. At the central, four-way on-site intersection on the east-west collector roadway providing access to/from the residential units, TJKM recommends installation of two-way stop sign control on the short local access roadways that comprise the north and south intersection legs. TJKM reviewed exhibits dated June 11, 2014 that the Revised Project architect provided, which depict the turning paths for a 39.5-foot truck (single-unit with no trailer) accessing the residential site driveways. For determining the adequacy of site access driveways, the vehicle depicted in the exhibits is representative of the largest vehicle expected for the great majority of delivery and service vehicles, and many of the moving trucks, that would access the site. However, a very large moving van, which typically consists of a tractor truck with a trailer up to 53 feet long, has significantly larger turning radius requirements, which were not depicted on the exhibits provided to TJKM.

Based on TJKM's review of the exhibits provided by the Revised Project architect, the on-site circulation roadways for the residential site appear to provide inadequate turning radii for truck access due to the size of some of the proposed chokers near internal intersections. In addition, the truck turning paths depicted at the Deer Hill Road/Homes/Dog Park driveway indicate that the proposed entry and exit driveway widths would not accommodate trucks making the westbound left-turn into and northbound left-turns out of the residential portion of the Project site. Additionally, although not depicted on the exhibits provided by the Revised Project architect, the proposed entry and exit driveway width would not accommodate a very large moving truck making an eastbound right-turn into and northbound right-turn out of this driveway. The infrequent occasions when very large moving vans would need to access the 44-home development would require that they enter and exit via these right turns to and from eastbound Deer Hill Road, and this driveway need not be designed to allow these very large trucks to make left turns in or out. The Soccer Drop-Off and Soccer Field/Park parking lot driveways and internal roadways also appear to provide inadequate truck turning radii to accommodate waste collection and large equipment delivery (i.e. 40-foot long, or SU-40 design vehicle) trucks making right turns in or out of the driveways and circulating through those areas, based on TJKM's review of exhibits provided by the Revised Project architect.

The inadequate truck turning radii at the Revised Project entry driveways and internal residential roadways would substantially increase hazards due to a design feature, which is a *significant* impact (Impact TRAF-5).

Existing plus Revised Project Construction Traffic Impacts

Construction activities, including the removal of debris from the demolition of existing on-site infrastructure and the delivery of construction materials to the Revised Project site, would result in approximately 6,000 trips distributed over a ten-month period. Grading for the Revised Project during construction would result in no net export or import of soil, so there would be no trips for grading haul. All truck trips for the hauling of demolition and construction materials are expected to arrive at and depart from the Revised Project vicinity using the Highway 24 freeway and ramps at the Pleasant Hill Road

interchange, in compliance with the City's truck route ordinance and standard requirements of a Construction Staging Plan that would be a condition of approval of the Revised Project. As a result, truck trips for this hauling operation are expected to be prohibited on Deer Hill Road west of the Project site. However, exceptions allowing trucks to use Deer Hill Road west of the Project site during selected construction phases, when truck operations for access via Pleasant Hill Road might prove to be undesirable as determined by the City Engineer, may be permitted in the Construction Staging Plan subject to approval by the City Engineer.

The truck trips generated during the demolition and construction phases of the Revised Project could result in the following conditions:

- Potential large truck turning movements during the AM peak hour at the Deer Hill Road/Pleasant Hill Road intersection would conflict with congested southbound Pleasant Hill Road traffic and significantly increase delay at the intersection.
- Large trucks potentially attempting U-turn movements from northbound to southbound Pleasant Hill Road at the Deer Hill Road intersection would be forced into stopping and backing up movements because of the constrained intersection geometry, contributing to traffic delay and queues at the intersection.
- Large trucks potentially attempting left turns from northbound Pleasant Hill Road to Deer Hill Road could be forced into stopping and backing up movements, or possibly drive over the south raised median on Pleasant Hill Road or conflict with eastbound vehicles stopped at the crosswalk limit line on Deer Hill Road, because of the constrained intersection geometry. These conditions would contribute to traffic delay and queues at the intersection and substantially increase hazards.
- Large trucks are expected to enter northbound Pleasant Hill Road from the westbound Highway 24 off-ramp and weave across northbound lanes to turn left at Deer Hill Road, or possibly at a temporary median opening that would provide direct access to the project site south of Deer Hill Road as a temporary construction access. During the PM peak hour when this segment of northbound Pleasant Hill Road is congested, these large truck weaving movements would significantly reduce traffic speeds and substantially increase hazards.
- Potential large truck turning movements on Deer Hill Road to access the project site could occur at locations with inadequate sight-distance, which would substantially increase hazards.
- Potential large truck traffic during the AM and school PM peak hours on Pleasant Hill Road and Deer Hill Road would conflict with pedestrians and passenger loading activity generated by Acalanes High School and other schools in the area on school days, substantially increasing hazards for school pedestrians.
- Elimination of the existing passenger loading zone on the west curb of Pleasant Hill Road along the Project site frontage, which is currently used intensely for school passenger loading during peak arrival and dismissal periods, would substantially increase hazards for school pedestrians and vehicle traffic by resulting in additional hazardous passenger loading activity at unsuitable locations.

During the grading phase of construction on the Revised Project, these conditions would result in *temporary significant* impacts (Impact TRAF-4).

Five significant impacts are identified above for Existing plus Revised Project Conditions and would be mitigated to less-than-significant levels with the implementation of Mitigation Measures TRAF-1 through TRAF-5. Mitigation measures are presented below in Section 4.9.1.5, Summary of Significant Traffic and Circulation Impacts and Mitigation Measures.

Cumulative No Project Conditions

This section details expected traffic conditions under Cumulative Year 2030 No Project Conditions for the study intersections and roadways in the Revised Project vicinity. For purposes of this traffic analysis, the Cumulative Year 2030 No Project Condition approximates no change from existing conditions at the Revised Project site. This scenario provides a basis of comparison for expected traffic generated by the Revised Project under Cumulative Year 2030 plus Revised Project Conditions. In terms of land use and roadway network assumptions for the Revised Project vicinity, TJKM used the latest approved version of the Contra Costa Transportation Authority (CCTA) travel demand model, which assumes future development in the vicinity would generate traffic approximately similar in magnitude to traffic generated by the Revised Project. The CCTA model estimates traffic growth between a base year of 2005 and future cumulative year of 2035. TJKM used a linear interpolation method to factor 30-year traffic growth from the model down to 20-year growth factors, to represent the approximate growth period between the Existing Conditions traffic counts performed in 2011 and the 2030 horizon year. The 20-year growth factors were applied to the Existing Conditions volumes at the study intersections based on knowledge of the study area. Approximately 2 percent growth per year over the 20-year period was added to the Existing Conditions through volumes on Pleasant Hill Road to generate Cumulative Year 2030 peak-hour volumes at the study intersections. However, because the CCTA travel demand model assumes future development in the Revised Project site area would generate traffic approximately similar in magnitude to traffic generated by the Revised Project, the model forecasts would overestimate roadway volumes for Cumulative Year 2030 No Project Conditions. To account for this overestimation, TJKM assumed that the Cumulative Year 2030 model forecasts include development of the Revised Project and are therefore used to analyze impacts under Cumulative Year 2030 plus Revised Project Conditions.

Correspondingly, TJKM subtracted the estimated traffic to be generated by the Revised Project from the Cumulative Year 2030 volumes derived from the CCTA travel demand model to estimate Cumulative Year 2030 No Project Conditions. The traffic forecasting methodology described above was used for all study intersections except Intersection #9 - Deer Hill Road/First Street – Sierra Vista Way and Intersection #10 - Deer Hill Road/Highway 24 Westbound Ramps -Laurel Drive, where the cumulative volumes from the Lafayette Downtown Specific Plan EIR traffic section were used. The Downtown Specific Plan cumulative traffic forecasts are based on a more detailed model of projected growth in Downtown Lafayette, which is more accurate for use at these two study intersections that are closer to Downtown. The Cumulative Year 2030 No Project Conditions turning movement volumes at the study intersections resulting from

application of the methodology described above are shown in Figure 4.9-7. Anticipated traffic controls and lane geometries for the study intersections, which are the same as under existing conditions, are also included in the figure.

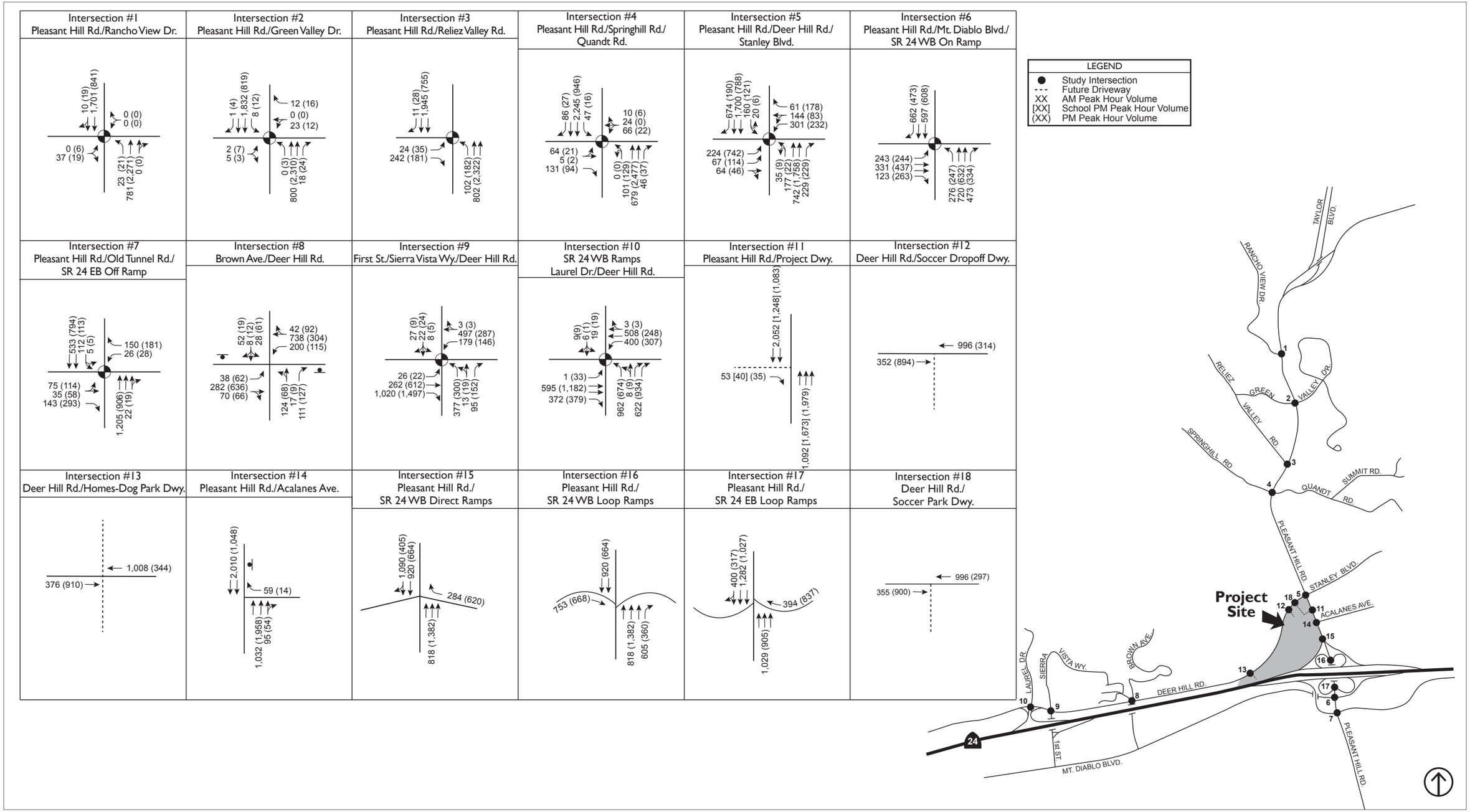
Cumulative Year 2030 No Project Intersection Level of Service

Table 4.9-13 illustrates the results of the level of service analysis for the study intersections under Cumulative Year 2030 No Project Conditions. Detailed level of service calculations are contained in Appendix L. Under Cumulative Year 2030 No Project Conditions, all of the signalized study intersections would operate within acceptable City LOS standards except the Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive intersection, which would operate at LOS E during the AM and PM peak hours. The Springhill Road – Quandt Road/Pleasant Hill Road intersection would operate at LOS E during the AM peak hour, and the Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection would operate at LOS F during the AM and PM peak hours. However, these intersections are not subject to an intersection LOS standard, but are part of the Pleasant Hill Road corridor north of Highway 24, which is a Route of Regional Significance, that is subject to the Delay Index criteria (per General Plan Policy C-1.2 of the Growth Management Chapter, the Lamorinda Action Plan, and CCTA guidelines).

At the only unsignalized study intersection in the Cumulative Year 2030 No Project Condition, the northbound and southbound stop-controlled minor approaches on Brown Avenue at Deer Hill Road, would operate at LOS F with extreme delays during the AM and PM peak hours. The California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant would be met for both peak hours under Cumulative Year 2030 No Project Condition, which is also the case under existing conditions.

For the Pleasant Hill Road corridor, SimTraffic simulation results for Cumulative Year 2030 No Project Conditions prepared for the Certified EIR project were reviewed and compared with the new Cumulative Year 2030 No Project Conditions to supplement the intersection LOS results. During the AM peak hour, traffic on southbound Pleasant Hill Road would back up from the intersections at Deer Hill Road – Stanley Boulevard and Springhill Road – Quandt Road, extending the queue past the junction at Taylor Boulevard. This back up would extend much further than the queue that extends past Green Valley Drive under Existing Conditions. In effect, as described for Existing Conditions, the LOS F conditions at the Deer Hill Road – Stanley Boulevard intersection would also occur upstream at the Springhill Road/Quandt Road, Reliez Valley Road, Green Valley Drive, and Rancho View Drive intersections, which impacts southbound Pleasant Hill Road traffic and other traffic movements that conflict with southbound traffic at each intersection. However, the City's intersection LOS methods are based on the LOS results calculated at each intersection individually, which are the results shown in Table 4.9-13.

During the commute PM peak hour, traffic on northbound Pleasant Hill Road would continue to back up from the intersection at Deer Hill Road – Stanley Boulevard and the queue would extend past the off-ramp from westbound Highway 24 as well as onto that off-ramp toward the freeway mainline.



Source: TJKM, 2014.

Figure 4.9-7
Cumulative Year 2030 No Project Traffic Volumes, Lane Geometry, and Controls

TABLE 4.9-13 CUMULATIVE YEAR 2030 NO PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

		AM Peak Hour		PM Peak Hour	
#	Intersection	Delay	LOS	Delay	LOS
1	Pleasant Hill Road/Rancho View Drive	8.4	A	7.6	A
2	Pleasant Hill Road/Green Valley Drive	7.2	A	7.7	A
3	Pleasant Hill Road /Reliez Valley Road	33.0	C	15.0	A
4	Pleasant Hill Road /Springhill Road – Quandt Road	68.5	E	38.9	D
5	Pleasant Hill Road/Deer Hill Road – Stanley Boulevard	203.7	F[a]	139.2	F[a]
6	Pleasant Hill Road/Mount Diablo Boulevard/Highway 24 Eastbound On-Ramp	17.3	B	17.6	B
7	Pleasant Hill Road/ Highway 24 Eastbound Off-Ramp – Old Tunnel Road	20.9	C	20.9	C
8	Deer Hill Road/Brown Avenue	**>300**	**F**	**>300**	**F**
9	Deer Hill Road/First Street – Sierra Vista Way	18.7	B	24.6	C
10	Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive	**56.9**	**E**	**65.8**	**E**
11	Pleasant Hill Road/Project Driveway	Not Analyzed – Future Intersection			
12	Deer Hill Road/Soccer Drop-Off Driveway	Not Analyzed – Future Intersection			
13	Deer Hill Road/Dog Park Driveway	Not Analyzed – Future Intersection			

Notes: LOS = Level of Service. Signalized, all-way stop-controlled, and roundabout intersections – Delay/LOS is for overall intersection. Unsignalized one- and two-way stop-controlled intersections – Delay/LOS is for critical minor stop-controlled approach.
Bold indicates unacceptable operational conditions based on applicable City standards.
a. Intersection LOS standard does not apply; Delay Index is the applicable standard for Pleasant Hill Road north of SR 24 per Lafayette General Plan.
Source: TJKM, 2014.

Cumulative Year 2030 No Project Routes of Regional Significance Delay Index Results

For Pleasant Hill Road north of Highway 24, which is a CCTA-designated Route of Regional Significance, the Cumulative Year 2030 No Project forecasts were developed by subtracting the estimated traffic to be generated by the Revised Project from the Cumulative Year 2030 volumes derived from the CCTA travel demand model. Delay Indexes on Pleasant Hill Road north of Highway 24 during the AM and PM peak hours were determined for the Cumulative Year 2030 No Project scenario. The Delay Index measures travel congestion and is expressed as the ratio of time required to travel between two points during the peak hour (the congested travel time) versus the time required during uncongested off-peak times. A Delay Index of 2.0, which is the acceptable standard of significance for peak hour peak direction travel on Pleasant Hill Road north of Highway 24, means that congested travel time is twice as long as during an off-peak travel time.

The Certified EIR included Delay Index analysis for Highway 24, which demonstrated that the Terraces of Lafayette Project impacts on Highway 24 would be less than significant. Because the Revised Project would generate fewer peak hour trips on Highway 24 than the Terraces of Lafayette Project, further Delay Index analysis is not needed to conclude that the Revised Project impacts would be *less than significant* on Highway 24.

For Pleasant Hill Road in both the northbound and southbound direction between Highway 24 and Rancho View Drive, the Delay Indexes in the Cumulative Year 2030 No Project scenario were calculated during the AM and PM peak hours, and are summarized in Table 4.9-14. As noted in the table, Pleasant Hill Road would operate with an unacceptable Delay Index of over 2.0 for southbound traffic in the AM peak hour and northbound traffic in the PM peak hour under the Cumulative Year 2030 No Project scenario.

TABLE 4.9-14 CUMULATIVE YEAR 2030 NO PROJECT DELAY INDEX – PLEASANT HILL ROAD

	Travel Time (Minutes)		Delay Index	
Scenario	AM Southbound	PM Northbound	AM Southbound	PM Northbound
Cumulative Year 2030 No Project	8.18	9.71	3.12	3.70

Source: TJKM, 2014.

Cumulative Year 2030 plus Revised Project Conditions

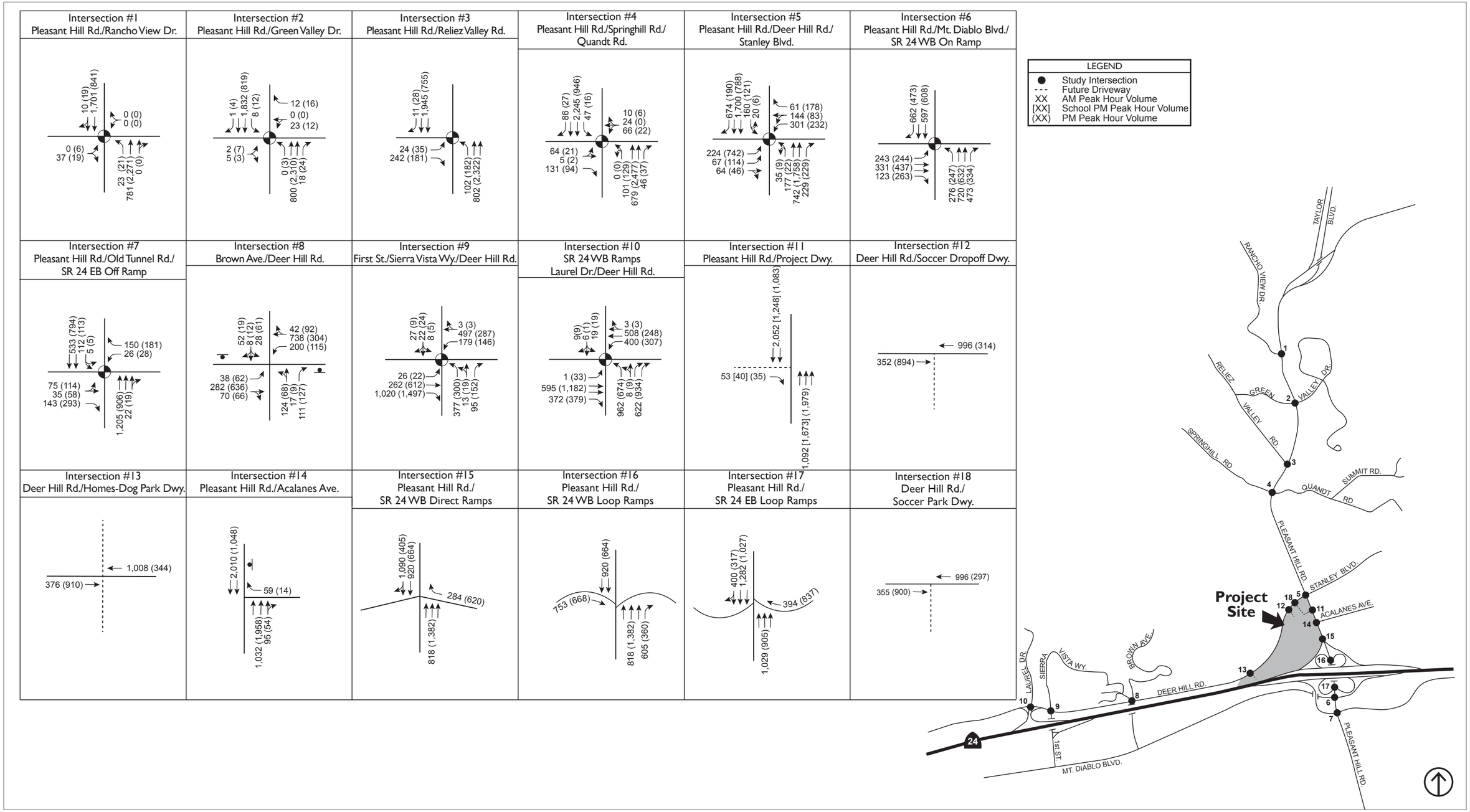
This scenario is similar to Cumulative Year 2030 No Project Conditions, but includes the additional traffic generated by the Revised Project. Except for the Revised Project and its proposed driveways, the assumed roadway network and nearby area development is the same under this analysis scenario as for Cumulative Year 2030 No Project Conditions.

Cumulative Year 2030 plus Revised Project Trip Generation, Distribution, and Assignment

The Revised Project trip generation, distribution, and assignment assumed under Cumulative Year 2030 plus Revised Project Conditions is identical to that assumed under Existing plus Revised Project Conditions. The resulting assigned project trips, which were excluded from the Cumulative Year 2030 No Project Conditions traffic volumes, are included in the Cumulative Year 2030 plus Revised Project traffic volumes. Figure 4.9-8 illustrates the resulting traffic volumes under Cumulative Year 2030 plus Revised Project Conditions.

Cumulative Year 2030 plus Revised Project Intersection Level of Service Results

Table 4.9-15 presents the results of the level of service analysis for the study intersections under Cumulative Year 2030 plus Revised Project Conditions. Detailed level of service calculations are contained in Appendix L.



Source: TJKM, 2014.

Figure 4.9-8
Cumulative Year 2030 Plus Revised Project Traffic Volumes, Lane Geometry, and Controls

Under Cumulative Year 2030 plus Revised Project Conditions with the addition of Revised Project traffic, all signalized intersections are expected to continue operating under acceptable City LOS standards, except the Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive intersection that would also operate at an unacceptable LOS under Cumulative Year 2030 No Project Conditions. This intersection would continue to operate at LOS E during the AM and PM peak hours, with delay increasing by 0.7 seconds and 0.4 seconds respectively. Because the Revised Project would increase delay by less than five seconds, the result would be a *less-than-significant* impact.

The Springhill Road – Quandt Road/Pleasant Hill Road intersection would continue operating at LOS E during the AM peak hour, with delay increasing by one second. The Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection would also continue operating at LOS F during the AM and PM peak hours, with delay increasing by 21.3 seconds and 0.6 seconds, respectively. The AM peak hour delay at the Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection would increase by more than five seconds with the addition of traffic from the Revised Project. However, these intersection delay increases are not considered a significant impact based on the revised significance thresholds for this Supplemental EIR that eliminate consideration of intersection LOS on Pleasant Hill Road north of Highway 24, in accordance with General Plan Policy C-1.2.

The Revised Project driveways assumed to be controlled with a one-way stop sign at intersections would operate at LOS C or better, which is acceptable. In addition, the Deer Hill Road/Homes/Dog Park intersection, which would be constructed as a roundabout, would operate at LOS B during the AM and PM peak hours, and the Pleasant Hill Road/Project driveway would operate at LOS B with an average stop-control delay of 10.3 seconds during the school dismissal PM peak hour. However, at the only unsignalized study intersection existing in the No Project Condition, the northbound and southbound stop-controlled minor approaches on Brown Avenue at Deer Hill Road would continue operating at an unacceptable LOS F during the AM and PM peak hours, with delay increases substantially higher than five seconds. The California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant would be met for both peak hours under both Cumulative Year 2030 No Project and Cumulative Year 2030 plus Revised Project Conditions. The Revised Project would increase delay by more than five seconds at an intersection operating below the acceptable standard, resulting in a *significant* impact (Impact TRAF-6).

For the Pleasant Hill Road corridor, SimTraffic simulation results for Cumulative Year 2030 No Project Conditions prepared for the Certified EIR, along with the new Cumulative Year 2030 No Project analysis, were reviewed and compared with the Cumulative Year 2030 plus Revised Project analysis presented above to supplement the intersection LOS results. During the AM peak hour under Cumulative Year 2030 No Project Conditions, traffic on southbound Pleasant Hill Road would back up from the intersections at Deer Hill Road – Stanley Boulevard and Springhill Road – Quandt Road, with the queue extending past the junction at Taylor Boulevard. The addition of Revised Project traffic would result in a minor increase in this queue length. In effect, as described for Cumulative Year 2030 No Project Conditions, the LOS F conditions at the Deer Hill Road – Stanley Boulevard intersection would also occur upstream at the Springhill Road/Quandt Road, Reliez Valley Road, Green Valley Drive, and Rancho View Drive intersections, which

would impact southbound Pleasant Hill Road traffic and other traffic movements that conflict with southbound traffic at each intersection. However, the City's intersection LOS methods are based on the LOS results calculated at each intersection individually, which are the results shown in Table 4.9-15 and described above. During the commute PM peak hour, traffic on northbound Pleasant Hill Road would continue to back up from the intersection at Deer Hill Road – Stanley Boulevard and the queue would extend past the off-ramp from westbound Highway 24 as well as onto that off-ramp toward the freeway mainline. (Note that, as stated above, this discussion is presented to supplement the intersection LOS results, but this analysis is not used to determine impact significance.)

Cumulative Year 2030 plus Revised Project Routes of Regional Significance Delay Index Results

Delay Indexes on Pleasant Hill Road north of Highway 24 during the AM and PM peak hours were determined for the Cumulative Year 2030 plus Revised Project scenario. For this analysis of the CCTA-designated Routes of Regional Significance, the additional trips generated by the Revised Project are included in the traffic forecasts from the CCTA traffic model for Cumulative Year 2030 Conditions.

The Certified EIR included Delay Index analysis for Highway 24, which demonstrated that the Terraces of Lafayette Project impacts on Highway 24 would be less than significant. As shown in Table 4.9-16, the Revised Project is expected to generate fewer peak hour, peak direction trips in both directions of Highway 24 than the Terraces of Lafayette Project that was evaluated in the Certified EIR. Because the Revised Project would generate fewer peak hour trips on Highway 24 than the Terraces of Lafayette Project, further Delay Index analysis is not needed to conclude that the Revised Project impacts would be *less than significant* on Highway 24.

For Pleasant Hill Road in both the northbound and southbound direction between Highway 24 and Rancho View Drive, the Delay Indexes in the Cumulative Year 2030 plus Revised Project scenario were calculated during the AM and PM peak hours, and are summarized in Table 4.9-17. As noted in the table, Pleasant Hill Road would operate with an unacceptable peak hour peak direction Delay Index of over 2.0 for southbound traffic in the AM peak hour and northbound traffic in the PM peak hour under the Cumulative Year 2030 plus Revised Project scenario. The addition of Revised Project trips to Pleasant Hill Road would increase the peak hour peak direction Delay Index by approximately 0.22 for southbound traffic in the AM peak hour and approximately .02 for northbound traffic in the PM peak hour under Cumulative Year 2030 plus Revised Project Conditions. Because the Delay Index would increase by more than 0.05 for AM peak hour peak direction traffic where the Delay Index exceeds 2.0 on Pleasant Hill Road, the result would be a *significant* impact (Impact TRAF-7).

TABLE 4.9-15 CUMULATIVE YEAR 2030 PLUS REVISED PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

		AM Peak Hour		PM Peak Hour	
#	Intersection	Delay	LOS	Delay	LOS
1	Pleasant Hill Road/Rancho View Drive	8.5	A	7.7	A
2	Pleasant Hill Road/Green Valley Drive	7.2	A	8.2	A
3	Pleasant Hill Road /Reliez Valley Road	33.5	C	15.4	B
4	Pleasant Hill Road /Springhill Road – Quandt Road	69.5	E	40.8	D
5	Pleasant Hill Road/Deer Hill Road – Stanley Boulevard	225.0	F[a]	139.8	F[a]
6	Pleasant Hill Road/Mount Diablo Boulevard/Highway 24 Eastbound On-Ramp	17.3	B	17.6	B
7	Pleasant Hill Road/ Highway 24 Eastbound Off-Ramp – Old Tunnel Road	21.7	C	22.8	C
8	Deer Hill Road/Brown Avenue	**>300**	**F**	**>300**	**F**
9	Deer Hill Road/First Street – Sierra Vista Way	19.2	B	25.2	C
10	Deer Hill Road/Highway 24 Westbound Ramps – Laurel Drive	**57.6**	**E**	**66.2**	**E**
11	Pleasant Hill Road/Project Driveway	12.2	B	9.6	A
12	Deer Hill Road/Soccer Drop-Off Driveway	0.0	A	22.3	C
13	Deer Hill Road/Homes - Dog Park Driveway	12..1	B	10.7	B

Notes: LOS = Level of Service. Signalized, all-way stop-controlled, and roundabout intersections – Delay/LOS is for overall intersection. Unsignalized one- and two-way stop-controlled intersections – Delay/LOS is for critical minor stop-controlled approach. **Bold** indicates unacceptable operational conditions based on applicable City standards.
a. Intersection LOS standard does not apply; Delay Index is the applicable standard for Pleasant Hill Road north of SR 24 per Lafayette General Plan.
Source: TJKM, 2014.

TABLE 4.9-16 TERRACES OF LAFAYETTE PROJECT AND REVISED PROJECT PEAK HOUR PEAK DIRECTION TRIPS – HIGHWAY 24

	Peak Period			
	Terraces of Lafayette Project		Revised Project	
Location	AM Westbound	PM Eastbound	AM Westbound	PM Eastbound
East of Pleasant Hill Road Interchange	7	16	5	11
West of Downtown Lafayette Interchange	36	35	8	15

Source: TJKM, 2014.

TABLE 4.9-17 CUMULATIVE YEAR 2030 PLUS REVISED PROJECT DELAY INDEX – PLEASANT HILL ROAD

	Travel Time (Minutes)		Delay Index	
Scenario	AM Southbound	PM Northbound	AM Southbound	PM Northbound
Cumulative Year 2030 No Project	8.18	9.71	3.12	3.70
Cumulative Year 2030 plus Revised Project	8.77	9.77	3.34	3.72

Source: TJKM, 2014.

As described in the previous Emergency Vehicle Access section, the emergency response route along Pleasant Hill Road would be northbound from Mount Diablo Boulevard, originating from Station 15. As under Existing plus Revised Project Conditions, under Cumulative Year 2030 plus Revised Project Conditions the Revised Project's less-than-significant impact on PM peak-hour travel time and Delay Index for northbound Pleasant Hill Road north of Highway 24 would not significantly impact emergency access to other areas of Lafayette served by Pleasant Hill Road between Highway 24 and Rancho View Drive. The result would be a *less-than-significant* cumulative impact.

Cumulative Year 2030 plus Revised Project Left-Turn Queues

Left-turn queue lengths on northbound Pleasant Hill Road at Deer Hill Road, as well as on westbound Deer Hill Road at the Soccer Drop-Off driveway, were also analyzed using Synchro results for Cumulative Year 2030 plus Revised Project Conditions in the AM and PM peak hours. The resulting 95th-percentile queue lengths were compared with the left-turn storage lane lengths that would be provided at these intersections to determine if that queue storage capacity would be adequate to avoid substantial new spillback into other lanes. The Cumulative Year 2030 plus Revised Project results are summarized as follows:

- **Northbound Pleasant Hill Road at Deer Hill Road – Stanley Boulevard:** The addition of Revised Project traffic at this intersection would increase the peak estimated 95th-percentile left-turn queue length from 302 feet to approximately 326 feet (one additional car length) during the AM peak hour, and the queue would exceed the capacity of the existing 250-foot storage lane with or without the Revised Project. The additional Revised Project traffic used for this analysis includes U-turns from northbound to southbound Pleasant Hill Road to enter the Soccer Field/Park parking lot, and left turns to Deer Hill Road to access the Soccer Drop-Off and Homes/Dog Park driveways, as well as additional conflicting Revised Project traffic on southbound Pleasant Hill Road headed toward the recreation facilities and homes. Because the additional queue length would only be approximately one car length where the queue would already exceed the storage lane capacity even without the Revised Project, which would not substantially increase traffic hazards, the impact is considered *less than significant*.
- **Westbound Deer Hill Road at the Soccer Drop-Off Driveway:** The estimated 95th-percentile left-turn queue lengths during the AM and PM peak periods would be no more than one car length. Although a westbound left-turn storage lane is not proposed at this intersection, the expected peak-

hour queue of one car is not expected to result in excessive queuing of westbound through vehicles on Deer Hill Road. Vehicles stopped in the travel lane waiting to make the left-turn should not pose a significant hazard for westbound through vehicles, as the positive grade approaching the driveway will adequately limit westbound approach speeds. Therefore, the impact at the Soccer Drop-Off driveway would be *less than significant*.

Although not required as mitigation at the Pleasant Hill Road/Deer Hill Road – Stanley Blvd intersection, TJKM recommends an extension of the northbound left-turn storage lane at Pleasant Hill Road/Deer Hill Road-Stanley Boulevard to accommodate the estimated AM peak hour queue. Extension of the storage lane by approximately 100 feet will adequately accommodate the estimated queue lengths at this intersection with and without traffic generated by the Revised Project. At the Soccer Drop-Off driveway, TJKM also recommends the parking restrictions described in the Existing plus Revised Project section on left-turn queues.

Two significant impacts are identified above for Cumulative Year 2030 plus Revised Project Conditions, Impact TRAF-6 would be mitigated to a less-than-significant level and Impact TRAF-7 would be significant and unavoidable. Mitigation measures are presented Section 4.9.1.5, Summary of Significant Traffic and Circulation Impacts and Mitigation Measures.

4.9.1.5 SUMMARY OF SIGNIFICANT TRAFFIC AND CIRCULATION IMPACTS AND MITIGATION MEASURES

The Revised Project would result the following significant Project-specific and cumulative traffic impacts. These impacts would be addressed by the following mitigation measures included in the Certified EIR. Modifications to the Certified EIR mitigation measures are identified in ~~strikeout text~~ to indicate deletions and underlined text to signify additions.

TRAF-1	**Under Existing plus Revised Project Conditions, northbound and southbound stop-controlled minor approaches on Brown Avenue at Deer Hill Road would continue operating at an unacceptable LOS F, with delay increases of 13 seconds during the AM peak hour and 54.6 seconds during the PM peak hour. The MUTCD peak hour traffic signal warrant would be met for both peak hours under both the Existing Conditions and Existing plus Revised Project scenarios. The Revised Project would increase delay by more than 5 seconds at an intersection operating below the acceptable standard, and result in inadequate emergency access to Deer Hill Road, resulting in a *significant* impact.**

Mitigation Measure TRAF-~~1~~2: ~~T~~Prior to Project completion, the Project applicant shall share ~~coordinate~~ with the City ~~to contribute a fair share of~~ the cost~~, including an in-lieu payment,~~ to install mitigation measures ~~a traffic signal~~ at the Brown Avenue/Deer Hill Road intersection~~, which will be~~

~~added to the City's Capital Improvement Projects (CIP) program~~. A mitigation option is to install a traffic signal as part of the Revised Project. The traffic signal equipment shall include an emergency vehicle preemption system (Opticom), which would allow emergency response vehicles approaching the signalized intersection to activate a green signal for their travel direction. The State Highway 24 freeway overpass structures on Brown Avenue could obstruct the Opticom activation device on responding emergency vehicles headed northbound on Brown Avenue from Mount Diablo Boulevard toward Deer Hill Road, which could substantially reduce the effectiveness of the traffic signal preemption. To avoid this problem, the traffic signal equipment shall include advance detection devices for the Opticom system as needed to assure effective traffic signal preemption for responding emergency vehicles on northbound Brown Avenue. An alternative mitigation option to installing a traffic signal would be the redesign of this intersection as a roundabout, which would improve the approach LOS for the minor approach volumes at this intersection.

Significance after Mitigation: Less than significant. As shown in Table 4.9-9:

- With signalization, the Brown Avenue/Deer Hill Road intersection would operate at LOS B during the AM and PM peak hours, and the advance detection devices for traffic signal preemption would provide adequate emergency access.
- With a roundabout, the Deer Hill Road/Brown Avenue intersection would operate at LOS B during the AM peak hour and LOS A during the PM peak hour, and would adequately accommodate emergency response vehicles.

Either mitigation alternative would reduce the impact to a less-than-significant level.

TRAF-2 Project design features would increase traffic hazards because the potential for inadequate sight-distance would exist at all of the Project driveways for traffic exiting the Project site. This would be a *significant* impact.

Mitigation Measure TRAF-2~~3~~: The Project applicant shall implement the following measures:

- **East of the Soccer Drop-Off ~~West of the East~~ Driveway on Deer Hill Road:** All landscaping along the south side of Deer Hill Road that is located in the line of sight for westbound ~~eastbound~~ traffic within 360 feet east ~~west~~ of the Soccer Drop-Off ~~east~~ Project driveway shall be limited to plants with foliage no more than 30 inches fully mature height above the closest adjacent curb elevation, or trees with canopy foliage no less than 10 ~~7~~ feet above the closest adjacent curb elevation~~, or other dimensions as specified by the City Engineer~~. The line of sight is defined as the area between the south curb on Deer Hill Road, and a straight line connecting a point 10 feet behind the back of the sidewalk on the centerline of the Soccer Drop-Off ~~east~~ driveway and a point 360 feet to the east in the westbound lane on Deer Hill Road ~~west~~ where it intersects the south curb line, or as otherwise specified by the City Engineer.

- **All Other Project Driveways:** All landscaping along the Project street frontage that is located in the line of sight of traffic approaching Project driveways in either direction shall be limited to plants with foliage no more than 30 inches fully mature height above the closest adjacent curb elevation, or trees with canopy foliage no less than ~~7~~ 10 feet above the closest adjacent curb elevation~~, or other dimensions as specified by the City Engineer~~. The line of sight is defined as an area within 10 feet behind the back of the sidewalk or shared-use path and within 50 feet of the driveway edge, or as otherwise specified by the City Engineer.
- **Entryway Features:** All monument signs, walls, slopes and other vertical features that could otherwise block visibility shall be no more than 3 feet higher than the adjacent driveway elevation in the area within 15 feet behind the back of the sidewalk or shared-use path and within 50 feet of the driveway edge, or as otherwise specified by the City Engineer.
- ~~The west Project driveway on Deer Hill Road shall be relocated at least 100 feet to the west of the location shown on the Project site plan.~~

Significance after Mitigation: Less than significant.

TRAF-3	**The emergency vehicle access shown on the Project site plans lacks provisions for turning around Fire District apparatus on dead-end emergency apparatus access roadways. This would result in inadequate emergency access to the Project site, which would be a *significant* impact.**

Mitigation Measure TRAF-~~3~~6: The Project site plans shall be revised to meet the access and turnaround requirements of the CCCFPD, which may include revising the site plan to include turnarounds on dead-end access streets in excess of 150 feet in length, provision of an alternative emergency vehicle access points, or other means acceptable to the Fire Marshal~~such that corner radii and medians at on-site driveway intersections provide a minimum inside turning radius of 25 feet and a minimum outside turning radius of 45 feet, per CCCFPD requirements~~.

Significance after Mitigation: Less than significant.

TRAF-4	**During the grading phase of construction on the Project site, large truck traffic on Pleasant Hill Road and Deer Hill Road and elimination of the existing passenger loading zone along the Project frontage on Pleasant Hill Road would result in a temporary *significant* impact.**

Mitigation Measure TRAF-~~4~~7: The Project applicant shall prepare and submit a Construction Staging Plan for review and approval by the City Engineer. The Construction Staging Plan shall include elements such as flaggers for trucks entering and exiting the Project site, and a designated liaison to

coordinate with the City, schools, and the public as needed. In addition, the Construction Staging Plan shall include the following measures:

- Large trucks involved in the grading phase of construction shall be prohibited from arriving at or departing from the Project site during the hours of 7:00 to 9:00 a.m. and 3:00 to 7:00 p.m. on any school day, and 7:00 to 9:00 a.m. and 4:00 to 7:00 p.m. on any non-school weekday.
- Large trucks shall be prohibited from making U-turn movements from northbound to southbound Pleasant Hill Road at the Deer Hill Road intersection during construction. The Construction Staging Plan shall specify for each construction phase whether access to the Project site from northbound Pleasant Hill Road will ~~be allowed, either by~~ require providing a median opening for left turns directly into the site south of Deer Hill Road as a temporary construction access, with flaggers to direct traffic for trucks entering or exiting the site~~, or will require a left turn onto Deer Hill Road and a subsequent left turn into the Project site at the east Deer Hill Road Project driveway~~.
- If the Construction Staging Plan allows large trucks to turn left from northbound Pleasant Hill Road to Deer Hill Road, accommodation of their turning radius may require the following temporary measures: modifications to the south median within up to 15 feet from the nose; relocation of the limit line for eastbound Deer Hill Road traffic lanes by up to 15 feet behind the existing crosswalk marking; adjustments to vehicle detectors, any other affected traffic signal equipment, and traffic signal timing as required to maintain safe and effective operations; and measures as otherwise specified by the City Engineer.
- The proposed locations and configuration of access points on Pleasant Hill Road and Deer Hill Road where large trucks would turn into or out of the Project site during construction shall be subject to approval by the City Engineer, to ensure consideration of sight-distance constraints and implementation of appropriate safety precautions.
- During any construction phase when access to the existing passenger loading zone on the west curb of Pleasant Hill Road along the Project frontage would be unavailable on school days, one of the following measures:
  - Provide a safe, temporary alternative loading zone in the immediate area, subject to approval by the City Engineer. Potential alternatives may include temporary use of the property on the northwest corner of Pleasant Hill Road and Deer Hill Road, which would require surface improvements to facilitate safe vehicle and pedestrian access.
  - Stage construction on the subject portion of the site such that prior to discontinuing the availability of ~~during the school break for summer,~~ the existing passenger loading zone, the Project shall ~~would be demolished and replaced by~~ construction of the proposed Soccer Field/Park parking lot, including its off-street ~~recommended roadway configuration and~~ passenger loading zone and access driveway on ~~the~~ Pleasant Hill Road ~~Project frontage~~.
- The Construction Staging Plan shall require restriping of bike lanes and other pavement markings at the discretion of the City Engineer to address wear from construction traffic.

- Special school events, such as swim meets, shall be addressed by the designated liaison required in the Construction Staging Plan, or any additional measures that the City Engineer may require in that Plan.
- The Construction Staging Plan shall include an engineering analysis to estimate the percentage of the pavement service life that will be used by Project construction truck trips on Pleasant Hill Road and Deer Hill Road. Based on this analysis, appropriate mitigation of the resulting damage shall be required from the Project sponsor, which may include construction of pavement improvements to restore the lost service life, or an in-lieu contribution of equivalent value, at the discretion of the City Engineer.

Significance after Mitigation: Less than significant.

TRAF-5	**Project driveways would provide inadequate truck turning radii for large trucks. The resulting improper lane use and other potential unsafe maneuvers by trucks on heavily travelled public streets and on-site roadways would substantially increase hazards due to a design feature, which is a *significant* impact.**

Mitigation Measure TRAF-5~~8~~: The Project site plan shall be revised at the ~~three~~ Project driveways such that adequate truck turning radii are provided, by widening the portion of the entry and exit roadway near each intersection, modifying the median configuration, ~~and/or~~ increasing the corner radius, and/or constructing the central island at the proposed roundabout with a traversable apron. At the proposed on-site roadways, the Project applicant shall reduce the size of some of the proposed chokers near internal intersections and raised islands in the Soccer Field/Park Parking Lot and Soccer Drop-Off as needed to provide additional roadway area for adequate truck turning radii.

Significance after Mitigation: Less than significant.

TRAF-6	**Under the Cumulative Year 2030 plus Revised Project scenario, the Brown Avenue/Deer Hill Road intersection would continue to operate at an unacceptable LOS F during the AM and PM peak hours, with delay increases substantially higher than 5 seconds. This would be a *significant* cumulative impact.**

Mitigation Measure TRAF-6~~9~~: Implement Mitigation Measure TRAF-1~~2~~.

Significance after Mitigation: Less than significant. Under Cumulative Year 2030 with Alternative Project conditions:

- With signalization, the Brown Avenue/Deer Hill Road intersection would operate at LOS B during both the AM and PM peak hours under Cumulative Year 2030 plus Revised Project Conditions.
- With a roundabout, the Deer Hill Road/Brown Avenue intersection would operate at LOS C during the AM peak hour and LOS B during the PM peak hour

Either mitigation alternative would reduce the Project impact to less than significant.

TRAF-7	**Under Cumulative Year 2030 plus Revised Project Conditions, the addition of Project trips to Pleasant Hill Road would increase the peak hour peak direction Delay Index by approximately 0.22 for southbound traffic in the AM peak hour. Because the Delay Index would increase by more than 0.05 for peak hour peak direction traffic where the Delay Index exceeds 2.0 on Pleasant Hill Road, and the result would be a *significant* cumulative impact.**

Mitigation Measure TRAF-7~~13~~: ~~No feasible mitigation measures are available to reduce this impact to a less-than-significant level.~~ Measures to manage the Delay Index on Pleasant Hill Road are contained in the Lamorinda Action Plan. These include: the provision of transit service along the Pleasant Hill Road/Taylor Boulevard corridor; increased pedestrian and bicycle mobility between area schools and surrounding neighborhoods; and traffic management measures, including implementing a gateway constraint north of the Revised Project location to meter traffic demand onto Pleasant Hill Road and discourage its use to bypass the Interstate 680/Highway 24 interchange.

The implementation of transit service and traffic management measures requires coordination and cooperation of other agencies outside of Lafayette and beyond the control of the Revised Project. As such, they are considered to be infeasible for the purpose of this Supplemental EIR. The Revised Project could include improvements to increase pedestrian and bicycle mobility between area schools, the Revised Project itself, and surrounding neighborhoods. Facilities currently included in the Revised Project provide good connectivity to Acalanes High School.

To improve connectivity to Springhill Elementary School, the Revised Project shall construct a pedestrian path along the west side of Pleasant Hill Road between Deer Hill Road and Springhill Road (described further in the Pedestrian Facility Impacts section). This action would reduce the Revised Project's share of the cumulative Delay Index impacts and be consistent with Lafayette's Master Walkways Plan; however, it would not fully mitigate the cumulative Delay Index impacts to less than significant.

A mitigation option not included in the Lamorinda Action Plan is to construct additional capacity on Pleasant Hill Road north of Highway 24, such as an additional southbound lane starting north of Deer Hill Road/Stanley Boulevard and continuing to the Highway 24 westbound on-ramp. In the Certified EIR, this measure is determined to violate the Gateway Constraint Policy of the Lamorinda Action Plan,

and result in secondary impacts that are inconsistent with Lafayette General Plan goals and policies. As such, this option is considered infeasible for the purpose of this Supplemental EIR.

Significance after Mitigation: Significant and unavoidable.

4.9.2 TRANSIT, PEDESTRIAN, AND BICYCLE FACILITIES

4.9.2.1 ENVIRONMENTAL SETTING

Regulatory Framework

City of Lafayette Master Walkways Plan

The City of Lafayette Master Walkways Plan, updated in March 2008, is intended to improve a system of walkways in the city, and thus provide safe and efficient pedestrian routes throughout Lafayette.[7] The City's Master Walkways Plan sets a priority for the installation of walkways. Walkways in Downtown Lafayette or those connecting to schools get the highest priority in construction. Other priorities are set according to the needs of the area.

The Master Walkways Plan calls for the following improvements in the Project site vicinity:

- Adding a walkway on the north side of Deer Hill Road from Pleasant Hill Road west to Brown Avenue. This is a "Priority 4" project.
- Adding a walkway on the west side of Pleasant Hill Road from the State Highway 24 westbound on-ramp to Reliez Valley Road. This is a "Priority 2" project.
- Completing walkways on both sides of Stanley Boulevard between Pleasant Hill Road and Camino Diablo to address missing links. This is a "Priority 2" project.

Bikeways Master Plan

The Lafayette City Council adopted the Lafayette Bikeways Master Plan on September 25, 2006. This Plan provides a broad vision and specific strategies and actions for improving bicycling in Lafayette. The Plan is intended to be used as a guide for developing a citywide system of bike lanes, bike routes, bike paths, bicycle parking, and other facilities to allow for safe, efficient, and convenient bicycle travel within Lafayette and between Lafayette and regional destinations.[8]

[7] City of Lafayette, 2008. Master Walkways Plan, http://www.ci.lafayette. ca.us/vertical/Sites/%7BC1C49B72-3D02-4C7B-82A7-92186ABD75FF%7D/uploads/ %7B74AF4F4E-DFD9-4933-9D7A-1CE6A49194D1%7D.PDF, accessed on March 1, 2012.

[8] City of Lafayette, 2006. Bikeways Master Plan.

The Bikeways Master Plan indicates the following improvements in the Project site vicinity:

- Adding a Class II (on-street, striped) bicycle lane on southbound Pleasant Hill Road from Deer Hill Road to Mount Diablo Boulevard, to address the missing link in the otherwise continuous bicycle lanes on Pleasant Hill Road.
- Construct a Class I (off-street) bicycle path between Pleasant Hill Road and the Brown Avenue/Deer Hill Road intersection on an alignment along the north side of the Caltrans State Highway 24 right-of-way.
- Extend the proposed Class I bike path cited in the preceding item to continue easterly of Pleasant Hill Road; the method of crossing Pleasant Hill Road is to be determined.
- Add a Class III (shared use of vehicle traffic lane) bicycle route extending east of Pleasant Hill Road on Acalanes Avenue, Nogales Street, and Camino Diablo.

Existing Conditions

Transit

Public transit systems in Lafayette that are relevant to the Revised Project site, including both local bus and Bay Area Rapid Transit (BART) regional rail service, are described below.

BART

The Project site is located approximately 1½ miles east on Deer Hill Road from the Lafayette BART Station platform, which is located in the median of State Highway 24 between Oak Hill Road and Happy Valley Road. The Pittsburg/Bay Point–San Francisco International Airport line serves the station seven days a week. Weekday service is provided between 4:00 a.m. and midnight, with Saturday service between 6:00 a.m. and mid-night and Sunday service between 8:00 a.m. and midnight. Weekday service ranges from 5- to 10-minute headways in the peak direction (5- to 15-minutes in the non-peak direction) during the AM and PM peak commute periods, to 15- to 20-minute headways during off-peak midday and late evening periods. On weekends, 20-minute headways are provided all day.

According to the 2008 BART Station Profile Study, parking at the Lafayette BART Station consists of 1,526 spaces, including 380 monthly permit spaces and the remaining 1,146 requiring a daily fee. The number of parking spaces includes the small parking lot on the south side of the station accessed from Happy Valley Road. In addition, 122 bicycle spaces are provided at the station, consisting of 30 bike lockers and 92 bike rack slots. Based on observations conducted in October 2011, it is estimated that all parking spaces at the Lafayette BART Station typically fill up before 8:30 a.m. on weekdays, except on Fridays when parking demand is lower than on other days.

Bus Transit

Bus service is provided locally by the Central Contra Costa Transit Authority's (CCCTA) County Connection. One fixed-route bus line, Route 25, is available at a reasonable walking distance within ½-mile of the Revised Project site at bus stops near the intersection of Pleasant Hill Road and Mount Diablo Boulevard. As shown on the route map on Figure 4.9-9A, Route 25 provides east-west service along Mount Diablo Boulevard and Olympic Boulevard, connecting the Lafayette and Walnut Creek BART Stations. Route 25 makes several local stops along Mount Diablo Boulevard between the Lafayette BART Station and Pleasant Hill Road, and a few stops on Pleasant Hill Road and Olympic Boulevard, then uses the Interstate 680 freeway before terminating at the Walnut Creek BART Station. Route 25 is designed to provide a continuous system ride, especially for employees in downtown Lafayette, between areas to the east of Lafayette and the downtown. County Connection riders can stay on that same transit system at the Walnut Creek BART station transit hub, rather than transferring to BART and paying an additional fare, to access Downtown Lafayette. This weekday-only route operates at hourly headways in both directions between 7:30 a.m. and 6:30 p.m. Route 25 buses operate at less than capacity with seating available; CCCTA data for February 2012 shows average weekday ridership of 50 passengers per day.

In addition to Route 25, County Connection provides supplemental service for schools in the area on school days, including Route 625 along Mount Diablo Boulevard, Pleasant Hill Road, Acalanes Avenue, and Stanley Boulevard, which serves Acalanes High School as shown on the route map on Figure 4.9-9B. This bus operates at less than capacity with seating available. Based on TJKM field bus boarding observations on a regular school day in January 2012, approximately 15 to 20 Acalanes High School students ride Route 625 on its single morning and afternoon runs.

Lamorinda School Bus Program

The City of Lafayette participates in a collaborative program with the City of Orinda and Town of Moraga to provide school bus service in the Lamorinda area. The goal of the program is to mitigate traffic congestion in Lamorinda on roadways south of State Highway 24 by reducing the number of drivers on these streets. The CCTA funds a significant portion of the program, with supplemental funding from fees paid by (parents of) riders and grant funding. The program serves Stanley Middle School and Springhill Elementary School, which have enrollment areas that include the Project site, as well as Burton Valley School.

City of Lafayette Spirit Van

The City operates the Spirit Van program for its senior residents, with door-to-door service provided by volunteer drivers.

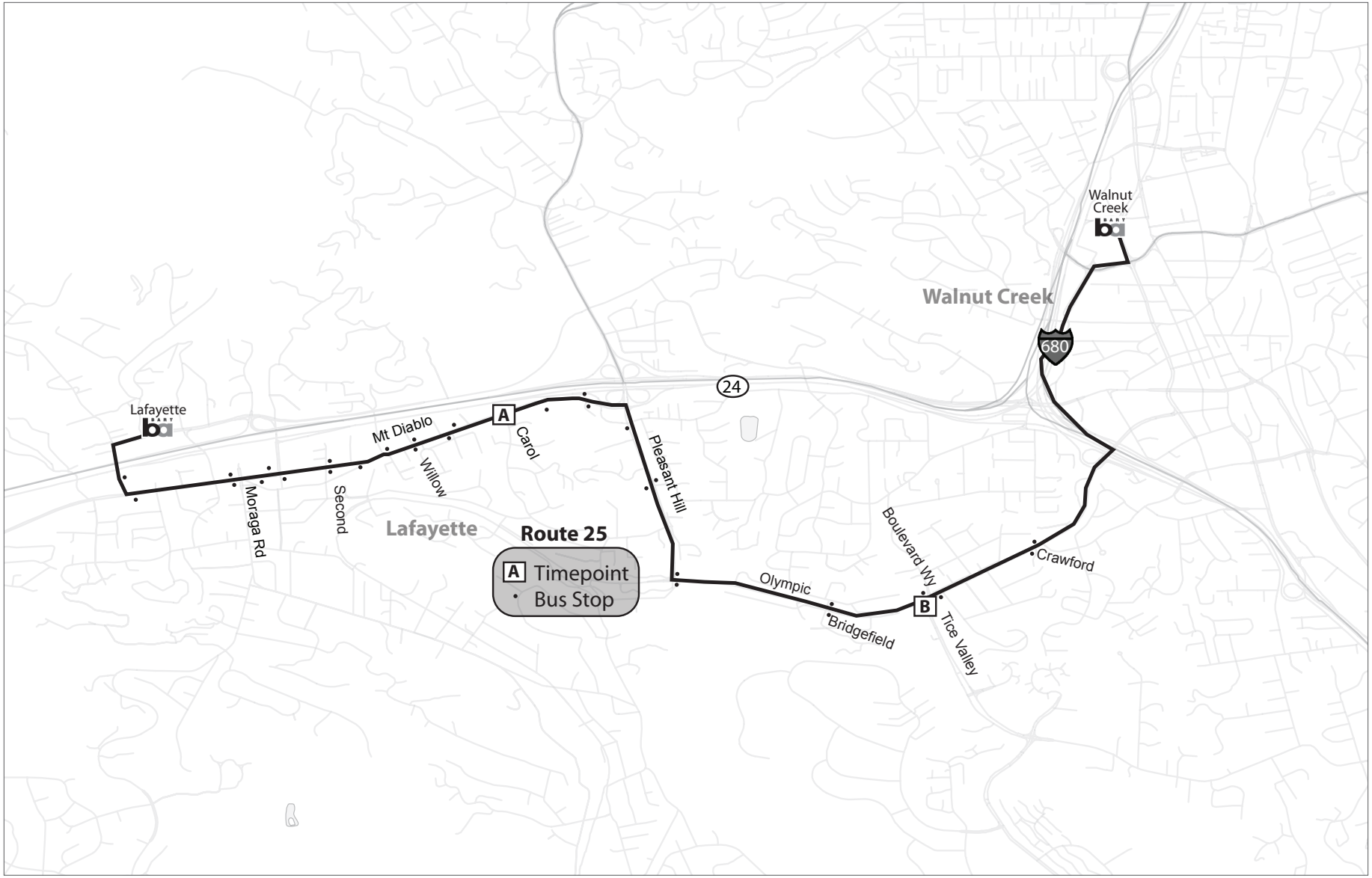


Figure 4.9-9A
Bus Transit Route Map, Route 25

Figure 4.9-9B
Bus Transit Route Map, Route 625

Pedestrian Facilities

The Revised Project site is currently served by limited pedestrian facilities. Deer Hill Road has no sidewalks in the Project vicinity, and pedestrians must use either the unimproved, irregular ground surface behind the raised curb or the Class II on-street, striped bicycle lane within the paved roadway. Pedestrian activity along Deer Hill Road is relatively light, except for the section within 200 feet west of Pleasant Hill Road, where the south side of the roadway is frequently used by Acalanes High School students being dropped off or picked up before and after school. The City's Master Walkways Plan includes adding a walkway on the north side of Deer Hill Road from Pleasant Hill Road west to Brown Avenue, and identifies this as a "Priority 4" project out of four priority categories, although the Plan permits that walkway projects are intended to be implemented as opportunities arise regardless of designated priority.

The west side of Pleasant Hill Road has very limited sidewalks in the Project vicinity. No sidewalk exists along the immediate project frontage south of Deer Hill Road, an area frequently used by Acalanes High School students being dropped off or picked up before and after school as well as pedestrians who have parked vehicles at the curb spaces on that segment. These pedestrians must use the unimproved, irregular ground surface behind the raised curb, which becomes very narrow next to a retaining wall along the southerly portion of the project frontage. Near the southeast corner of the Project site, approximately 300 feet north of the on-ramp to westbound Highway 24, a sidewalk on the west side begins and extends to the south along Pleasant Hill Road. North of Deer Hill Road, the only existing sidewalk on the west side of Pleasant Hill Road is a short segment extending approximately 150 feet north from Deer Hill Road. The City's Master Walkways Plan includes adding a walkway on the west side of Pleasant Hill Road from the Highway 24 westbound on-ramp to Reliez Valley Road, and identifies this as a "Priority 2" project out of four priority categories.

Continuous sidewalk is provided on the east side of Pleasant Hill Road across from the Project site, extending north along Acalanes High School and south toward Olympic Boulevard. Approximately 600 feet south of the Quandt Road – Pleasant Hill Road intersection, the sidewalk ends at a connection with Hillview Lane, and pedestrians must walk along a narrow residential access roadway parallel to Pleasant Hill Road and separated by a landscaped fence. Stanley Boulevard has continuous sidewalk on the north side along Acalanes High School frontage and extending east into a residential neighborhood, but the sidewalk on the south side extends approximately 275 feet east from Pleasant Hill Road and ends at a residential driveway. The City's Master Walkways Plan includes completion of walkways on both sides of Stanley Boulevard between Pleasant Hill Road and Camino Diablo to address missing links, and identifies this as a "Priority 2" project out of four priority categories.

Marked crosswalks and pedestrian signal indications are provided for crossing the west, south, and east legs of the signalized Deer Hill Road – Stanley Boulevard/Pleasant Hill Road intersection, which is heavily used by Acalanes High School pedestrians before and after school. However, a large number of Acalanes High School pedestrians "jaywalk" across Stanley Boulevard within 100 to 275 feet east of the signalized intersection, with nearly 100 pedestrians observed crossing in this area on their way to Acalanes High

School before school. Pedestrians apparently find crossing in this area more convenient than waiting for the signal to cross Stanley Boulevard at the intersection, which very few pedestrians were observed doing. Although crossing traffic in this illegal manner is somewhat hazardous, especially in the wider, multi-lane section close to the intersection, the large numbers of high school age pedestrians crossing mostly during a 20-minute period before and after school every day make them fairly visible to drivers. State-Wide Integrated Traffic Records System (SWITRS) data provided by the City's Engineering staff for a recent four-year period shows no reported accidents involving pedestrians in the Project vicinity.[9]

Pedestrian safety and convenience walking along both sides of Pleasant Hill Road between the Project site and Mount Diablo Boulevard is challenged at three to four crosswalks that require crossing uncontrolled free-flow traffic to and from Highway 24 ramps or a right turn to westbound Mount Diablo Boulevard. City staff has suggested potential improvement concepts for these crosswalks to Caltrans, which has jurisdiction over these freeway ramp junctions, but further action toward any improvements is undetermined and subject to actions by the State. The City is in the process of seeking funds to conduct a corridor study to improve pedestrian and bike access and safety between Mount Diablo Boulevard and Springhill Road/Quandt Road.

Bicycle Facilities

The Project site is served by existing bicycle facilities, but a gap exists along the Project's Pleasant Hill Road frontage. A Class II (on-street, striped) bicycle lane is provided on southbound Pleasant Hill Road north of Deer Hill Road and south of Mount Diablo Boulevard, but not on the segment between those two roadways, where bicyclists must share a lane with motor vehicle traffic alongside curb parking. The City's Bikeways Master Plan shows continuous Class II bicycle lanes for this area of Pleasant Hill Road. Northbound Pleasant Hill Road and both directions on Deer Hill Road include continuous Class II bicycle lanes in the Project vicinity. Stanley Boulevard has bicycle shared-lane pavement markings, known as "sharrows," which are consistent with the Bikeways Master Plan designation of Stanley Boulevard as a "Bike Boulevard." Traffic counts and observations indicate that several bicyclists per hour travel these roadways and facilities.

Steep grades on Deer Hill Road present a physical challenge for bicyclists, which may discourage potential bicycle travel. The City's Bikeways Master Plan proposes constructing a Class I (off-street) bicycle path between Pleasant Hill Road and the Brown Avenue/Deer Hill Road intersection on an alignment along the north side of the Caltrans Highway 24 right-of-way. This alignment near the base of the hill that Deer Hill Road climbs over would provide much less elevation change and easier grades for bicyclists. The Bikeways Master Plan also proposes extending the Class I bike path easterly of Pleasant Hill Road, but states that the method of crossing Pleasant Hill Road is to be determined. According to City Engineering staff, the most

[9] As noted in the TJKM TIA, safer pedestrian behavior in this segment might be encouraged by installing a fence or barrier rail along the north curb of Stanley Boulevard between Pleasant Hill Road and the AHS exit driveway approximately 175 feet to the east, and installing a school crosswalk on Stanley Boulevard at that driveway. However, a fence or barrier along the curb could present a safety issue for drivers and a visual impact for the public, and installing an acceptable crosswalk design would be very challenging because of existing driveways and a drainage inlet on the north curb across from the AHS driveway.

recent discussions of the planned bike path would propose crossing Pleasant Hill Road at the Deer Hill Road/Stanley Boulevard traffic signal, with an off-street path along the west side of Pleasant Hill Road connecting between the signal and the Caltrans right-of-way.

Bicyclist safety and convenience traveling in both directions on Pleasant Hill Road between the Project site and Mount Diablo Boulevard is challenged at three to four locations where bicyclists encounter conflicting uncontrolled free-flow traffic to and from Highway 24 ramps or a right turn to westbound Mount Diablo Boulevard. City staff has suggested potential improvement concepts for these locations to Caltrans, which has jurisdiction over the subject freeway ramp junctions, but further action toward any improvements is undetermined. The City is in the process of seeking funds to conduct a corridor study to improve bicycle and pedestrian access and safety between Mount Diablo Boulevard and Springhill Road/Quandt Road. SWITRS data provided by the City's Engineering staff for a recent four-year period shows no reported accidents involving bicyclists in the Project site vicinity.

4.9.2.2 CHANGES IN THE REVISED PROJECT RELATED TO TRANSIT, PEDESTRIAN, AND BICYCLE FACILITIES

The Revised Project includes the construction of sidewalks along the Deer Hill Road and Pleasant Hill Road project frontages at the following locations. On Deer Hill Road, a sidewalk would be constructed at a proposed bus stop with a walkway leading to the residential component, and would only service/provide access to/from the bus stop passenger loading area. Additional sidewalks would be located along the site's northern frontage, providing access from the soccer field drop-off to the Deer Hill Road/Stanley Boulevard/Pleasant Hill Road intersection, and on the north side of Deer Hill Road just west of the Deer Hill Road/Homes/Dog Park driveway, which would provide access between the dog park and a proposed crosswalk on Deer Hill Road connecting to the south side at the proposed multi-use trail.

The Revised Project includes a multi-use trail that would extend from just west of the Deer Hill Road/Homes/Dog Park driveway to the southwest corner of the Deer Hill Road/Pleasant Hill Road intersection via a path parallel to the Project site's southern boundary, between the residential component and Highway 24. This path would cross the Pleasant Hill Road driveway at a point approximately 50 feet behind the west curb and continue northerly before connecting to the public sidewalk at the Pleasant Hill Road/Deer Hill Road-Stanley Boulevard intersection.

In addition to the multi-use trail, the Revised Project also proposes various pedestrian facilities internal to the site that would provide connections between the various land uses and the external pedestrian infrastructure. At the dog park, a small walkway would connect the dog play areas to the parking lot, which would also provide a walkway connecting to the north side of Deer Hill Road. A pedestrian trail would provide a connection between a pocket park along the site's southern boundary, the parking lot, the residential component via the soccer field, and the proposed park. Sidewalks would facilitate pedestrian circulation throughout the residential component, which would include internal roadways permitting vehicular access to the residential units. The sidewalks and walkways within the residential component

would provide access between the residential units and other trails and paths leading to the non-residential land uses and to the external pedestrian network.

4.9.2.3 STANDARDS OF SIGNIFICANCE

The Revised Project would result in a significant transportation and traffic impact if it would:

1. Generate added transit ridership that would increase the peak hour average ridership at a BART station by three (3) percent where average waiting time at fare gates also either:
   a. Already exceeds one minute, or
   b. Would exceed one minute as a result of ridership added by the project.
2. Generate added transit ridership that would increase the AM load factor on a County Connection bus line such that it would be over capacity during the AM peak hour (load factor greater than 1.0).
3. Create demand for public transit services above that which is provided or planned; disrupt or interfere with existing or planned transit services or facilities; or create inconsistencies with adopted transit system plans, guidelines, policies, or standards.
4. Disrupt existing bicycle or pedestrian facilities; interfere with planned bicycle or pedestrian facilities; or create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, policies, or standards.

4.9.2.4 TRANSIT, PEDESTRIAN, AND BICYCLE FACILITY IMPACT DISCUSSION

Potential Revised Project impacts on public transit systems in Lafayette, including both local bus and BART regional rail service, are described below. The Revised Project would potentially increase ridership on these systems, particularly during commute peak hours. Note that regardless of the estimated potential number of transit trips generated by the Revised Project that is described below, no vehicle-trip reductions were assumed in the traffic analysis because the Revised Project site is not within reasonable walking distance of significant public transit services, based on published research data.

Survey data from the 2010 Census for Lafayette residents citywide indicates that approximately 12 percent use transit for commuting. Assuming that 12 percent of the commute peak-hour Revised Project trip generation for the homes, soccer field, and park would use transit, the Revised Project would add 8 transit trips during the AM peak hour and 17 transit trips during the PM peak hour. TJKM assumed that the dog park would generate negligible transit use because of its lack of proximity to transit service and the nature of its use. However, the 12 percent transit use for commute peak-hour trip generation by the soccer field and park is a conservatively high assumption.

Transit Impacts

BART

The 2008 BART Station Profile Study and online BART ridership figures were reviewed for the available ridership data to determine the potential impacts of the Revised Project on BART. Based on the BART data sources, average weekday passenger entries and exits at the Lafayette BART Station totaled approximately 6,900 trips in January 2012.

TJKM assumed that only the residents of the Revised Project homes would use BART, because of the nature of the dog park, soccer field, and park uses and their relatively inconvenient access to BART. Using a conservatively high assumption that all of the expected peak-hour transit trip generation from the Revised Project homes would use BART in the peak-hour peak direction, it is estimated that the Revised Project would generate five new BART station passenger entries during the AM peak hour and six new passengers exiting during the PM peak hour. These BART trips would add approximately 0.9 percent to existing average weekday peak period ridership entering and exiting at the Lafayette station. Table 4.9-18 shows the results of the project-added BART trip share analysis.

TABLE 4.9-18 ESTIMATED REVISED PROJECT-ADDED TRIPS AT LAFAYETTE BART STATION

	Existing Average Weekday BART Trips	Revised Project-Added BART Trips	% Increase
AM Peak Hour	575	5	0.9%
PM Peak Hour	665	6	0.9%

Note: Based on BART Station Profile Study (2008), BART ridership data (2012).
Source: TJKM, 2014.

The Revised Project is not expected to increase the peak hour average ridership at the Lafayette BART Station by more than 3 percent during peak hours, which is one of the two thresholds that must both be met to result in a significant impact on BART. The other threshold is peak hour average waiting time at fare gates that would exceed one minute. Based on observations by TJKM at the Lafayette BART station, the peak hour average waiting time at fare gates is less than 15 seconds, including the worst-case PM peak hour when passengers exit in large groups from arriving trains. The six new PM peak hour BART passengers added by the Revised Project, who would be distributed among ten eastbound (PM peak direction) and six westbound (PM off-peak direction) arriving trains, are not expected to increase the average waiting at fare gates to more than one minute. Because neither the peak hour ridership percent increase nor average waiting time at fare gates at the Lafayette BART Station would be met with the Revised Project, the result would be a *less-than-significant* impact.

TJKM used observations conducted in October 2011 to estimate that all parking spaces at the Lafayette BART Station typically fill up before 8:30 a.m. on weekdays, except on Fridays when parking demand is lower. Based on Census data on transit use by Lafayette resident commuters and the Revised Project-

generated peak one-hour BART trips shown in Table 4.9-18, TJKM estimates that the Revised Project would generate additional weekday parking demand for up to 15 spaces, which is less than 1 percent of the 1,526 spaces in the lot and is considered a *less-than-significant* impact.

Bus Transit

TJKM estimated the portion of transit riders generated by the Revised Project that are expected to use County Connection's Route 25 bus line as the total number of Revised Project-generated transit trips described previously less the estimated number of project-generated BART trips shown in Table 4.9-18. The remaining number was used to determine the potential impacts to County Connection bus service.

Route 25 is the only fixed-route bus line with stops within reasonable walking distance of the Revised Project site. According to 2009 data provided by County Connection staff, Route 25 had an average weekday ridership of approximately 60 passengers in Spring 2009. The January 2011 County Connection *Mini Short Range Transit Plan* indicates that average weekday ridership on Route 25 amounted to 47 passengers in November 2010. The Revised Project is expected to add three trips to this route for the AM peak hour and eleven trips for the PM peak hour. The County Connection ridership data indicates that this route currently operates well below capacity during peak periods. The addition of 11 trips during any peak hour would not be significant so as to increase the load factor above 1.0 (seats full).

Route 625 is the County Connection bus route service for Acalanes High School students, with one bus arriving before school in the morning and one bus leaving after school in the afternoon using streets near the Revised Project site to access the bus stop on the north side of Stanley Boulevard. Because Revised Project residents attending Acalanes High School could easily walk or bike to the campus across the street from the Project site, the Revised Project is not expected to add riders to Route 625. No existing bus stops are located on the Revised Project site's street frontage, and the only existing bus route that runs along the Revised Project frontage is Route 625, with two bus trips per school day passing by on southbound Pleasant Hill Road. Therefore, the Revised Project impact on existing County Connection bus service and facilities would be *less than significant*.

The *Lamorinda Action Plan* (adopted December 2009) includes a Multimodal Transportation Service Objective (MTSO) for Pleasant Hill Road to "Establish CCCTA bus service on Pleasant Hill Road and/or Taylor Boulevard that has a composite frequency of at least two buses per hour during peak commute and school times (6:30 – 9:30 a.m. and 3:30 – 6:30 p.m.) and direct connection to the Lafayette BART station." It also includes as an action for Pleasant Hill Road to "support the provision of" such service, for which the City of Lafayette is identified as the responsible party. If implemented, such future bus service would likely attract riders from the Revised Project and Acalanes High School, and include a new bus stop along the Project site frontage on Pleasant Hill Road and/or Deer Hill Road near the intersection of those roadways. Although neither CCCTA nor the City has adopted specific plans or identified funding for implementation of such new bus service on Pleasant Hill Road, the Revised Project site plan proposes bus stops with pullout areas along the Project site frontages on eastbound Deer Hill Road and southbound Pleasant Hill Road, both of which could potentially be served by future routes providing a "direct connection to the Lafayette BART

station," as specified in the Lamorinda Action Plan. Because bus stops with pullout areas are proposed along the Pleasant Hill Road and Deer Hill Road frontages of the Project site, although no specific plan or funding has been identified for the bus service, the result is a *less-than-significant* impact.

Other Local Transit Services

Lamorinda School Bus Program

With the addition of residential units in the Lafayette School District, the Revised Project has the potential to add to the rider demand for the Lamorinda School Bus Program. The program includes service to Stanley Middle School and Springhill and Burton Valley Elementary Schools. The Revised Project is expected to generate approximately nine middle school and nine elementary school grade students. Most of the Revised Project's elementary school students are expected to attend Springhill Elementary School, and the bus program would not be available to them because the school is located within walking distance approximately one-half mile north of the Project site. For the Revised Project's assumed nine Stanley Middle School students, applying the historical 20 percent ratio of bus program annual passes for the Stanley Routes vs. total Stanley Middle School enrollment would result in approximately two additional riders on the bus program's Stanley Routes.

The Lamorinda School Bus Program Manager has indicated that up to 30 additional riders could be accommodated on the Stanley Routes, although possible funding issues could affect future service capacity. Participation in the program requires Lamorinda parents to submit an application for their children to be added to the school bus service and to prepay for that service for the school year.

These annual passes fund approximately one-third of the program budget, with Measure J County sales tax allocations funding most of the remainder. Because additional seat capacity is available and parents would pay a significant amount of the program cost if they choose to subscribe, the additional ridership demand from the Revised Project is expected to have minor effects, which the Lamorinda School bus program can accommodate.

The Revised Project proposes accommodations for the 40-foot buses to stop for passenger loading and unloading at locations reasonably convenient to the Project site. The proposed bus turnouts would allow these school buses to pull off to the side of the road completely out of traffic lanes for passenger loading activity, thereby avoiding the requirement to activate flashing red lights requiring all traffic on the adjacent roadway to stop. Morning buses to Stanley Middle School would arrive at the Project site on southbound Pleasant Hill Road, and afternoon buses would arrive on either northbound Pleasant Hill Road or eastbound Deer Hill Road. Northbound Pleasant Hill Road across from the Project site does not have room for a bus to pull out of traffic lanes; however, the Project site plans propose bus turnouts along the site frontage on southbound Pleasant Hill Road and eastbound Deer Hill Road. Each of these proposed bus stops would be connected with the Project's residential units by sidewalks and trails proposed on-site. The proposed turnouts would allow approaching buses to exit the traffic lane during boarding and alighting, while allowing adjacent through-lane traffic to continue unimpeded. Because the bus turnouts would allow peak

hour traffic on those roadways to continue unimpeded without exacerbating congestion, the Revised Project-generated demand for school bus service would result in a *less-than-significant* impact.

City of Lafayette Spirit Van

With the addition of residential units within Lafayette, the Revised Project has the potential to add senior residents to the rider demand for the Spirit Van program. Because precise senior resident numbers are not yet known for the Revised Project, it would be speculative to quantify the potential impacts to the Spirit Van service that would result from additional riders.

Pedestrian Facility Impacts

The Revised Project proposes constructing a sidewalk along the Project site frontage as follows:

- On the south side of Deer Hill Road at the bus turnout, a sidewalk would be provided that would connect with an on-site walkway to access the Revised Project's residential units. A sidewalk on the south side of Deer Hill Road would also be provided from just west of the Soccer Drop-Off driveway to the Pleasant Hill Road intersection.
- On the west side of Pleasant Hill Road, a sidewalk would extend south from Deer Hill Road to the Soccer Field/Park driveway.

The proposed sidewalk on Deer Hill Road would be 5 feet wide at the bus turnout and between the Soccer Drop-Off driveway and the Soccer Field/Park parking lot entrance driveway. This sidewalk would expand to a width of 6 feet past the soccer/park parking lot driveway up to the Pleasant Hill Road intersection. The site plan shows a landscaped buffer strip between the proposed sidewalk on Deer Hill Road and the curb. On Pleasant Hill Road, the proposed sidewalk would be 10 feet wide; no landscape buffer is shown on the site plan for this sidewalk segment, which would also serve a proposed bus stop pullout. In addition, a pedestrian trail would traverse the site from the southern edge of the residential component to the sports field, and a 10-foot wide multi-use trail would connect from the westernmost portion of the Project site on Deer Hill Road to the southwest corner of the Pleasant Hill Road/Deer Hill Road intersection. The added sidewalk on the west side of Pleasant Hill Road from Deer Hill Road to the parking lot driveway would provide a portion of the walkway specified for completion in the City's Master Walkways Plan. Although the Master Walkways Plan specifies adding a walkway on the north side of Deer Hill Road, the proposed multi-use trail traversing the Project site and avoiding the steep grades to the crest of Deer Hill Road would improve pedestrian access for the public. This would serve as an appropriate alternative to providing a continuous walkway on Deer Hill Road, and therefore would constitute a *less-than-significant* impact.

The Revised Project does not propose sidewalks along the Project site frontage on Pleasant Hill Road south of the Soccer Field/Park parking lot driveway. On Pleasant Hill Road north of Olympic Boulevard, the City constructed a shared path for pedestrians and bicycles that is 10 feet wide with a 4- to 5-foot wide landscape strip between the path and the roadside curb. The City is also seeking grant funding to conduct a corridor study of Pleasant Hill Road between Mount Diablo Boulevard and Springhill Road to develop a cross section

including improved pedestrian and bicycle facilities. This corridor section would be an extension of the improvements to the south on Pleasant Hill Road. Because the Revised Project does not propose a sidewalk on the Pleasant Hill Road Project site frontage south of the Soccer Field/Park parking lot driveway, and proposes a narrower sidewalk than anticipated along the Project frontage on Pleasant Hill Road north of the parking lot driveway, the Revised Project would be inconsistent with City guidelines for pedestrian facilities, resulting in a *significant* impact (Impact TRAF-8).

In addition, proposed driveways accessing Deer Hill Road and Pleasant Hill Road would interrupt the new sidewalks and the proposed multi-use trail crossing west of the Pleasant Hill Road driveway, and present conflicting vehicle traffic for pedestrians. This would be a *significant* impact (Impact TRAF-9).

The Revised Project would generate additional pedestrians in the vicinity of the Revised Project site. The Acalanes Union High School District anticipates that between eight and eleven additional high school students would be generated from the proposed residential development. Most of these students would be expected to walk to and from the Project site to attend Acalanes High School, crossing at the signalized Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection. The Revised Project's proposed park and soccer field would also increase the number of pedestrians crossing at this intersection. Additionally, the Soccer Field/Park parking lot at the southwest corner of Pleasant Hill Road/Deer Hill Road is proposed to accommodate passenger loading for Acalanes High School students before and after school. However, this is mostly expected to accommodate pick-ups and drop-offs that currently occur on the west curb of Pleasant Hill Road and on eastbound Deer Hill Road near that southwest corner of their intersection, resulting in no more than a negligible increase in pedestrians crossing the intersection. The traffic level of service analysis assumes the maximum condition of pedestrians crossing this intersection on every signal cycle during peak hours, and the additional pedestrians would have a *less-than-significant* impact on intersection traffic operations.

The pedestrians generated by the Revised Project would likely join the existing large number of Acalanes High School pedestrians (nearly 100 each morning) that "jaywalk" across Stanley Boulevard within 100 to 275 feet east of the signalized intersection. Although crossing traffic in this illegal manner is somewhat hazardous, the large numbers of high school age pedestrians crossing mostly during a 20-minute period before and after school every day make them fairly visible to drivers, and accident data provided by the City's Engineering staff for a recent four-year period shows no reported accidents involving pedestrians in this area. Because of the nature of this existing condition, additional high school pedestrians generated by the project would not substantially increase hazards, and the project impact is considered *less than significant*.

The Revised Project is expected to generate approximately nine additional elementary school (K-5) students, and most are expected to attend Springhill Elementary School, which is approximately one-half mile north of the Project site on Pleasant Hill Road. A substantial portion of these students could likely walk this distance to and from Springhill School, accompanied by a parent as appropriate, if a more direct walkway connection was provided. However, no walkway exists on the west side of Pleasant Hill Road between Deer Hill Road and Springhill School. To make this trip on improved walkways, pedestrians must

cross Pleasant Hill Road at the Deer Hill Road signal and at the Springhill Road/Quandt Road signal to use the sidewalk on the east side, which has a gap of approximately 500 feet between Quandt Road and Hillview Lane where pedestrians must walk along a narrow residential access roadway. A crossing guard is provided before and after school at the Springhill Road/Quandt Road signal, but not at the Deer Hill Road signal. These existing obstacles are likely to significantly limit the number of Project-generated Springhill students walking to and from school.

The City's Master Walkways Plan includes adding a walkway on the west side of Pleasant Hill Road in this area. The existing topography between Deer Hill Road and Springhill Elementary School includes an area where a steep embankment slopes up immediately adjacent to the roadway, presenting a significant engineering challenge for an acceptable walkway design. Construction of a walkway on a relatively flat area along the top of the embankment approximately 25 feet west of the Pleasant Hill Road curb, with connections to typical curbside elevations at the north and south ends, appears feasible. However, ADA accessibility and acquisition of right-of-way are potential issues.

The Revised Project would contribute to the need for a walkway on the west side of Pleasant Hill Road between Deer Hill Road and Springhill Elementary School, but a safe alternative is provided by the existing sidewalk on the east side, and this condition would not substantially increase hazards or disrupt existing or planned pedestrian facilities. Because this condition does not meet the significant impact criteria based on CEQA Guidelines, this pedestrian impact is considered *less than significant*. However, Mitigation Measure TRAF-7 requires the Revised Project to construct a walkway on the west side of Pleasant Hill Road, to reduce the Revised Project's share of cumulative Delay Index impacts on Pleasant Hill Road.

Data from the 2010 U.S. Census shows that approximately 1.4 percent of Lafayette residents and 1.6 percent of Contra Costa County residents commuting to work did so by walking. Assuming that 1.5 percent of the commute peak-hour Revised Project trip generation for the residential, dog park, city park, and soccer field land uses would walk, the Revised Project would generate one walking trip during the AM peak hour and three walking trips during the PM peak hour. If these additional pedestrians walk to and from the south on Pleasant Hill Road to access employment sites on Mount Diablo Boulevard or homes to the south, and are added to those expected to walk to and from County Connection bus, the combined total would be approximately 4 pedestrians in the AM peak hour and 14 in the PM peak hour. This number of Project-generated pedestrians and the conflicting Project-added vehicle-trips (see Figure 4.9-3) would contribute to possible justification for desirable pedestrian improvements along Pleasant Hill Road at the uncontrolled Highway 24 freeway ramp crossings. However, the existing crosswalks meet CAMUTCD standards, and this condition would not substantially increase hazards or disrupt existing or planned pedestrian facilities. Because this condition does not meet the significant impact criteria based on CEQA Guidelines, the resulting impact on pedestrian facilities would be *less than significant*. This finding does not preclude the City from potentially requiring the Revised Project sponsor to contribute toward construction of pedestrian safety improvements at the Highway 24 freeway ramp crossings as a condition of project approval. Although not required as mitigation, TJKM recommends installation of pedestrian crossing warning signs and high-visibility pavement markings at the Highway 24 freeway ramp crosswalks.

Vehicle traffic generated by the Revised Project would increase existing traffic volumes on adjacent roadways by the following percentages:

- Pleasant Hill Road south of the Revised Project driveway – less than 5 percent
- Deer Hill Road west of the Revised Project driveways – less than 4 percent
- Stanley Boulevard – less than 2 percent
- Pleasant Hill Road north of Deer Hill Road – less than 2 percent

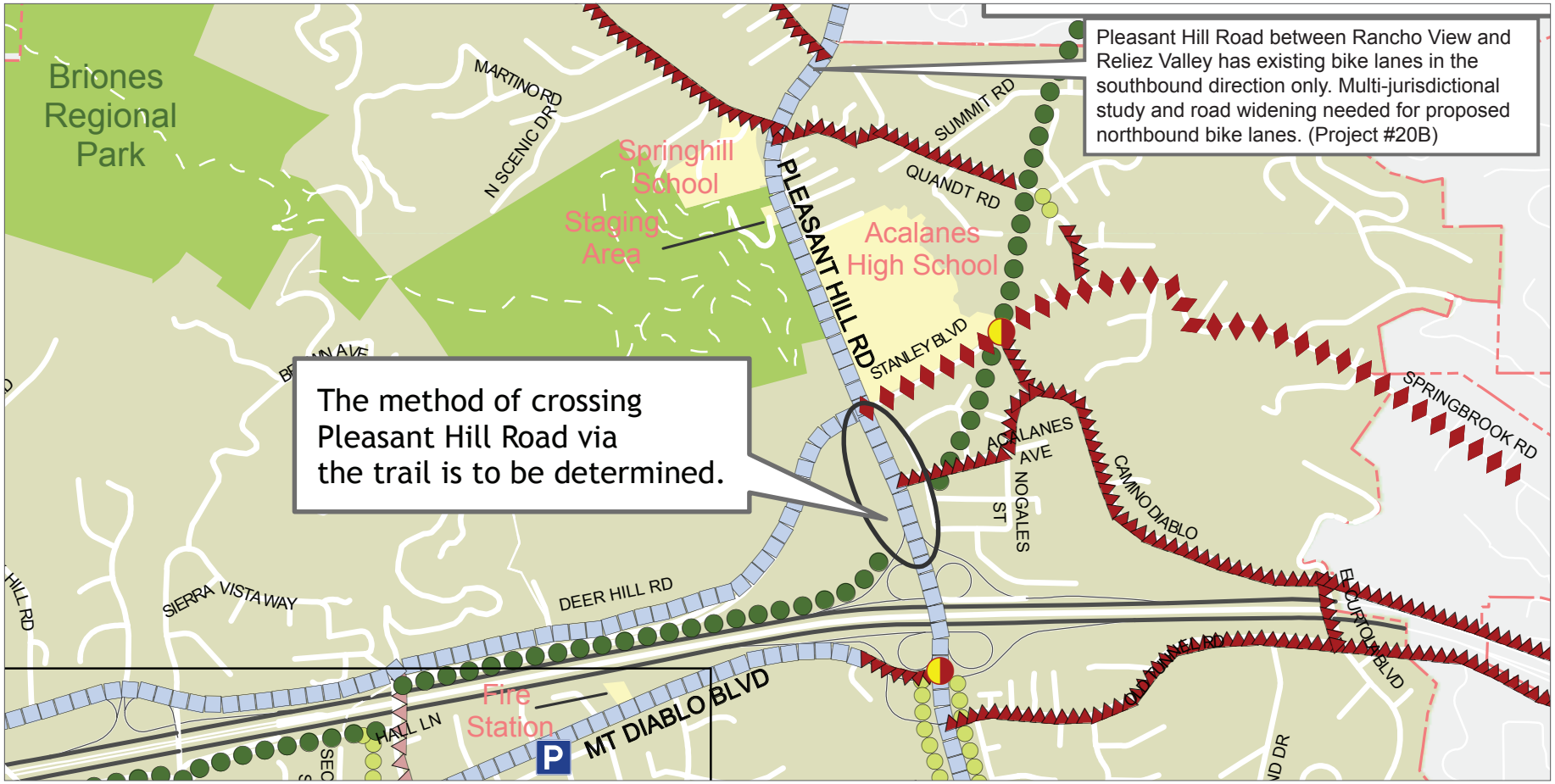
These increases are within the range of typical daily fluctuations in traffic volumes, which can vary by 5 to 10 percent from day to day, and would not significantly impact the pedestrian experience on adjacent sidewalks. Additionally, the small percentage increase on Stanley Boulevard would not significantly impact the Acalanes High School pedestrian "jaywalking" condition described above. The Revised Project would increase traffic volumes on Deer Hill Road west of Pleasant Hill Road by a somewhat higher percentage. However, the potential impact on pedestrians would be offset by the Revised Project's proposed construction of the multi-use trail traversing the Project site from the Deer Hill Road connection at the west Project limit to the southwest corner of the Pleasant Hill Road/Deer Hill Road intersection. This would allow pedestrians to avoid walking along Deer Hill Road and the steep grades to its hillcrest. The resulting impacts on the pedestrian experience on adjacent sidewalks would be *less than significant*.

Two significant impacts are identified above for pedestrian facilities and would be mitigated to less-than-significant levels with the implementation of Mitigation Measures TRAF-8 and TRAF-9. Mitigation measures are presented Section 4.9.2.6, Summary of Significant Transit, Pedestrian, and Bicycle Facility Impacts and Mitigation Measures.

Bicycle Facility Impacts

The bicycle facilities proposed by the City's Bikeways Master Plan in the vicinity of the Revised Project site are shown in Figure 4.9-10. The Revised Project does not propose any bicycle facilities along the Project site frontage on the west side of Pleasant Hill Road. The City's Bikeways Master Plan envisions a complete Class II bicycle lane as part of the network on Pleasant Hill Road south of Deer Hill Road. Because the Revised Project does not propose bicycle facilities on Pleasant Hill Road, the inconsistency between the Revised Project and the City's Bikeways Master Plan is a *significant* impact (Impact TRAF-10).

The City's Bikeways Master Plan proposes constructing a Class I (off-street) bicycle path between Pleasant Hill Road and the Brown Avenue/Deer Hill Road intersection on an alignment along the north side of the Caltrans Highway 24 right-of-way. The Bikeways Master Plan also proposes extending the Class I bike path easterly of Pleasant Hill Road, and the most recent City discussions propose crossing Pleasant Hill Road at the Deer Hill Road/Stanley Boulevard traffic signal, with an off-street path along the west side of Pleasant Hill Road connecting between the signal and the Caltrans right-of-way. The Project site borders the north



Source: City of Lafayette, 2006.

0 .5
Scale (Miles)

Proposed Bikeways
- Bike Path (Class 1)
- Bike Route (Class 3)
- Bike Boulevard

Existing Bikeways
- Bike Path (Class 1)
- Bike Lane (Class 2)
- Bike Route (Class 3)

- County Connection Transit
- City Boundaries
- Civic Uses
- Parks

Figure 4.9-10
City of Lafayette Bikeways Master Plan:
Proposed Bikeways in the Revised Project Site Vicinity

side of the Caltrans right-of-way and the west side of Pleasant Hill Road, where these bicycle facilities are planned.

The Revised Project proposes construction of a multi-use trail traversing the Project site between the proposed residential component and Highway 24, extending from west of the Homes/Dog Park driveway to the southwest corner of the Pleasant Hill Road – Deer Hill Road intersection. This added multi-use trail would provide a portion of the EBMUD Aqueduct/Caltrans ROW Trail recommended in the City's Bikeway's Master Plan, which would also run between Brown Avenue north of Highway 24 and the Walter Costa Trail north of the Lafayette Reservoir.

On the west side of Pleasant Hill Road, the Revised Project proposes construction of a 10-foot wide sidewalk along the Project site frontage between Deer Hill Road and the proposed driveway. The proposed multi-use path traversing the Project site would connect with the proposed sidewalk just south of the southwest corner of the Deer Hill Road/Pleasant Hill Road intersection. However, the proposed site plan is not consistent with recent project approvals facilitating the installation of Class I bicycle facilities, and does not propose the construction of bicycle facilities on Pleasant Hill Road south of the Soccer Field/Park parking lot driveway. The City recently completed construction of a shared path for pedestrians and bicycles that is 10 feet wide with a 4- to 5-foot wide landscape strip between the path and the roadside curb on Pleasant Hill Road north of Olympic Boulevard. The City is also seeking grant funding to conduct a corridor study of Pleasant Hill Road between Mount Diablo Boulevard and Springhill Road to develop a cross section including improved bicycle and pedestrian facilities. This corridor section would be an extension of the improvements to the south on Pleasant Hill Road.

Because the Revised Project proposes a narrower facility on the west side of Pleasant Hill Road than those recently constructed by the City for shared bicycle and pedestrian use and those anticipated at that location, and does not propose the construction of bicycle facilities on Pleasant Hill Road south of the Soccer Field/Park parking lot driveway, the Revised Project would interfere with planned bicycle facilities, resulting in a *significant* impact (Impact TRAF-11).

Mitigation Measures TRAF-8 and TRAF-10 presented in Section 4.9.2.6 below would require two new facilities along Pleasant Hill Road: a new shared path for bicycles and pedestrians along the Project site frontage between Deer Hill Road and the westbound Highway 24 on-ramp, and a southbound Class II bicycle lane on Pleasant Hill Road. This configuration of the shared path is expected to require a retaining wall along a portion of the Project frontage. One option for providing the Class II facility would include widening the southbound roadway along the Project site frontage to provide a standard Class II bike lane while retaining the existing curb parking lane. This configuration would require a longer and higher retaining wall along the Project frontage. For a segment extending north from the Soccer Field/Park driveway, additional widening may be required to accommodate the proposed bus turnout in addition to the Class II bike lane.

The potential secondary aesthetics impacts of the retaining wall that would be required to implement these mitigation measures are evaluated in Section 4.1, Aesthetics and Visual Resources, of this Draft

Supplemental EIR. A conceptual design of the retaining wall is included in the visual simulations for Viewpoint 8 in Section 4.1. As discussed in Section 4.1, the retaining wall would not create a significant adverse aesthetic effect. Please see Section 4.1 for a more detailed discussion of potential secondary aesthetic impacts.

A retaining wall would have the potential to create secondary impacts associated with erosion, storm drainage, and slope stability. Consistent with City of Lafayette requirements (Municipal Code Section 6-2062, Hillside Development Permit Approval Process), storm drainage and geotechnical evaluations would be required prior to construction of the retaining wall. Geotechnical evaluation is also required under the City's Building Code (Municipal Code Section 3-304, City of Lafayette Building Code). The City also requires erosion control planting for all erodible cut slopes greater than 5 feet in height (Municipal Code Section 3-708, Erosion Control Planting). Compliance with existing City requirements would ensure that potential secondary impacts would be less than significant.

Traffic entering and exiting proposed driveways accessing Deer Hill Road and Pleasant Hill Road would cross existing, proposed, and recommended Class I and Class II bike facilities, including the proposed multi-use trail crossing west of the Pleasant Hill Road driveway, and present conflicting vehicle traffic for bicyclists. The volumes of conflicting vehicle traffic using the Revised Project driveways, as well as the volumes of bicyclists expected to cross those driveways on the bike lanes and multi-use trail that are envisioned as primary links in the City's Bikeways Master Plan network, would be substantial. This would be a *significant* impact (Impact TRAF-9).

Data from the 2010 U.S. Census shows approximately 0.72 percent of Lafayette residents and 0.7 percent of Contra Costa County residents commuting to work by bicycle. Assuming that 1 percent of the commute peak-hour Revised Project trip generation for the residential, park, and soccer field land uses would be bike trips, the Revised Project would generate one bike trip during the AM peak hour and one to two bike trips during the PM peak hour. This number of Project-generated bike trips and the conflicting Project-added vehicle-trips (see Figure 4.9-3) would not contribute significantly to the need for bicycle facilities, including improvements along Pleasant Hill Road at the uncontrolled Highway 24 freeway ramp crossings. The existing design at these locations meets CAMUTCD standards, and this condition would not substantially increase hazards or disrupt existing or planned bicycle facilities. Because this condition does not meet the significant impact criteria based on CEQA Guidelines, the resulting impact on bicycle facilities would be *less than significant*. This finding does not preclude the City from potentially requiring the Revised Project sponsor to contribute toward detailed study and construction of bicycle safety improvements on Pleasant Hill Road at the Highway 24 freeway ramp crossings as a condition of project approval.

Vehicle traffic generated by the Revised Project would increase existing traffic volumes on adjacent roadways by the following percentages:

- Pleasant Hill Road south of the Revised Project driveway – less than 5 percent
- Deer Hill Road west of the Revised Project driveways – less than 4 percent

- Stanley Boulevard – less than 2 percent
- Pleasant Hill Road north of Deer Hill Road – less than 2 percent

These increases are within the range of typical daily fluctuations in traffic volumes, which can vary by 5 to 10 percent from day to day, and would not significantly impact bicyclist operations or safety on adjacent bike lanes or the Bike Boulevard on Stanley Boulevard. The Revised Project would increase traffic volumes on Deer Hill Road west of Pleasant Hill Road by up to 9 percent. However, the potential impact on bicyclists would be offset by the Revised Project's proposed construction of the multi-use trail traversing the Project site from the Deer Hill Road connection at the west Project limit to the southwest corner of the Pleasant Hill Road/Deer Hill Road intersection. This would allow bicyclists to avoid this segment of Deer Hill Road and the steep grades to its hillcrest. The resulting project impacts on bicyclist operations and safety on bicycle facilities would be *less than significant*.

Three significant impacts are identified above for bicycle facilities and would be mitigated to less-than-significant levels with the implementation of Mitigation Measures TRAF-9, TRAF-10 and TRAF-11. Mitigation measures are presented Section 4.9.2.6, Summary of Significant Transit, Pedestrian, and Bicycle Facility Impacts and Mitigation Measures.

4.9.2.5 CUMULATIVE IMPACTS

Similar to the previous descriptions of the Revised Project's impacts relative to Existing Conditions, the numbers of additional transit riders, pedestrians and bicyclists generated by the Revised Project would be small percentages of the expected ridership/volumes and capacities of transit, pedestrian and bicycle facilities under future Cumulative Conditions. The increased traffic volumes generated by the Revised Project on adjacent roadways would be well within the range of typical daily fluctuations in future Cumulative Condition traffic volumes, and would not significantly impact pedestrian or bicyclist safety or operations on adjacent sidewalks, crosswalks, and bike lanes. Potential interference or inconsistency with planned future transit, pedestrian, and bicycle facilities as a result of the Revised Project was already addressed in the previous section, and the mitigation measures identified therein would also result in cumulative impacts that are less than significant. Therefore, under Cumulative plus Revised Project Conditions, the Revised Project would not have additional impacts that are cumulatively considerable on transit, pedestrian, or bicycle facilities.

4.9.2.6 SUMMARY OF SIGNIFICANT TRANSIT, PEDESTRIAN, AND BICYCLE FACILITY IMPACTS AND MITIGATION MEASURES

The Revised Project would result in the following significant impacts to transit, pedestrian, and bicycle facilities. These impacts would be addressed by the following mitigation measures included in the Certified EIR. Modifications to the Certified EIR mitigation measures are identified in ~~strikeout text~~ to indicate deletions and <u>underlined text</u> to signify additions.

TRAF-8	**Some of the sidewalk widths proposed by the Project plans would be narrower than those existing in the immediate vicinity or recently approved by the City on arterial roadways (which have a 10-foot width with a 4- to 5-foot wide landscape strip between the path and the roadside curb), and the Project does not propose the construction of pedestrian facilities on Pleasant Hill Road south of the Soccer Field/Park driveway. Therefore, the Project would be inconsistent with City guidelines for pedestrian facilities. This would be a *significant* impact.**

Mitigation Measure TRAF-~~8~~16B: On the west side of Pleasant Hill Road along the Project site frontage between Deer Hill Road and the westbound Highway 24 on-ramp, construct a new shared path for bicycles and pedestrians at a paved width of 10 feet with a buffer strip at least 4 feet wide between the path and the curb, or dimensions as otherwise ~~specified~~ formally approved by the City ~~Engineer~~. The buffer strip's surface treatment shall be appropriate to accommodate pedestrians accessing vehicles at curb parking and bus stop ~~passenger~~ loading areas. This configuration is expected to require a retaining wall along a portion of the Project frontage, which is evaluated in Section 4.1, Aesthetics and Visual Resources, of this Supplemental EIR. At the southwest corner of Pleasant Hill Road and Deer Hill Road, the path shall be designed to accommodate expected volumes of pedestrians and bicyclists waiting for the traffic signal. This shared path shall connect with the proposed path traversing the Project site at a point just south of the parking lot driveway and at a point just south of the southwest corner of Pleasant Hill Road and Deer Hill Road. These junctions shall provide seamless connections between the two paths, including design features to control conflicts between intersecting pedestrians and bicycles, while reducing conflicts between vehicles entering and exiting the Project driveway and bicyclists and pedestrians by providing a single path crossing the driveway at a location a short distance away from vehicle turning movements at Pleasant Hill Road. This measure shall be implemented in addition to Mitigation Measure TRAF-10. ~~the Class II (on-street) bike lane on southbound Pleasant Hill Road described in Mitigation Measure TRAF-18 and other improvements described in Mitigation Measures TRAF-19, TRAF-20, and TRAF-21.~~

Significance after Mitigation: Less than significant.

TRAF-9	**Project driveways accessing Deer Hill Road and Pleasant Hill Road would interrupt the new sidewalks and the proposed multi-use trail crossing west of the Pleasant Hill Road driveway, and would cross existing, proposed, and recommended Class I and Class II bike lanes facilities. This would present conflicting vehicle traffic for pedestrians and bicyclists, which would be a *significant* impact.**

Mitigation Measure TRAF-~~9~~17: Implement Mitigation Measure TRAF-~~2~~3. In addition, the Project applicant shall install stop signs for traffic exiting Project driveways, except at the roundabout at the

Homes/Dog Park driveway where yield signs are required, and pedestrian safety enhancement measures including special physical design treatments such as paving and signage to be specified by the City Engineer to alert drivers entering and exiting the Project site that they are crossing pedestrian and bicycle facilities.

Significance after Mitigation: Less than significant.

TRAF-10	**The Revised Project site plan does not propose any bicycle facilities along the Project site frontage on the west side of Pleasant Hill Road. The City's Bikeways Master Plan envisions a complete Class II bicycle lane as part of the network on Pleasant Hill Road south of Deer Hill Road. Because the Project site plan does not propose bicycle facilities on Pleasant Hill Road, the inconsistency between the Project proposal and the City's Bikeways Master Plan is a *significant* impact.**

Mitigation Measure TRAF-10: The Project applicant shall revise the proposal to include a southbound Class II bicycle lane to be consistent with the vision and intent of the City's Bikeway Master Plan. The bicycle lane shall be provided from the Deer Hill Road/Pleasant Hill Road intersection to the south side of the westbound Highway 24 on-ramp. To implement this mitigation, the Project applicant shall work with the City and Caltrans to provide a safe bicycle facility, including features to reduce safety conflicts at the Highway 24 on-ramp crossing (such features may include signage, striping, and/or other features recommended by the City Engineer). The design is expected to include widening the southbound roadway along the Project site frontage to provide a standard Class II bike lane while retaining the existing curb parking lane. This configuration would require a longer and higher retaining wall along the Project frontage than that expected with Mitigation Measure TRAF-8. The potential secondary aesthetics impacts of the retaining wall are evaluated in Section 4.1, Aesthetics and Visual Resources, of this Supplemental EIR. For a segment of southbound Pleasant Hill Road extending north from the Soccer Field/Park driveway, additional widening may be required to accommodate the proposed bus turnout in addition to the Class II bike lane. (This measure shall be in addition to Mitigation Measure TRAF-8.)

Significance after Mitigation: Less than significant.

TRAF-11	**Project plans propose a narrower facility on the west side of Pleasant Hill Road than those recently constructed by the City for shared bicycle and pedestrian use, and the Project does not propose the construction of bicycle facilities on Pleasant Hill Road south of the Soccer Field/Park driveway. Therefore, the Project would be inconsistent with City plans and guidelines for bicycle facilities, resulting in a *significant* impact.**

Mitigation Measure TRAF-11~~19~~: Implement Mitigation Measure TRAF-8. (This measure shall be implemented in addition to the improvements described in Mitigation Measure TRAF-10.)~~16B. In addition, the Project applicant shall coordinate with the City and Caltrans to ensure that Project site improvements adjacent to the Caltrans State Highway 24 right-of-way, such as grading, drainage, retaining walls, or other structures, do not preclude construction of a Class I bicycle path meeting applicable vertical and horizontal alignment standards, at a paved width of 10 feet with graded shoulders at least 2 feet wide on both sides, or as otherwise specified by the City Engineer. The Project applicant shall dedicate additional right-of-way as needed to ensure the feasibility of constructing such a path. The Project applicant shall coordinate with the City to develop an appropriate alignment of the path to connect with the shared bicycle/pedestrian path described in Mitigation Measure TRAF-16B while also intersecting the Project driveway on Pleasant Hill Road as described in Mitigation Measure TRAF-20. This measure shall be implemented in addition to the improvements described in Mitigation Measures TRAF-18 and TRAF-21.~~

Significance after Mitigation: Less than significant.

4.9.3 PARKING

4.9.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

The parking requirements within the Administrative/Professional Office (APO) district are referred to in the general parking section of the Lafayette Municipal Code, Chapter 6-6, which does not include parking for residential uses because such requirements are typically included within each residential zone. The residential zone that most closely resembles the housing proposed by the Project is the Multiple-Family Residential District B (MRB).[10] The MRB zone requires parking spaces to be provided at a ratio of 1.2 stalls per one-bedroom unit, 1.5 stalls per two-bedroom unit, two stalls per three-bedroom unit, and 0.2 stalls per unit for guest parking.

Existing Conditions

Fronting the Project site along the southbound, west side of Pleasant Hill Road south of Deer Hill Road, parallel curb parking spaces are marked, and parking is prohibited all day on Saturdays, Sundays and holidays, and from 3:00 to 6:00 a.m. Monday through Friday. The portion immediately south of Deer Hill Road is designated by white curb and posted signs as a "Passenger Loading Zone" for approximately 80 feet,

[10] The MRB zone provides direction and regulation for medium-density multiple-family residential districts to be consistent with and further the City's overall planning objective of the preservation and enhancement of its semi-rural residential character (Ord. 146 Section 2 (part), 1975).

or four car lengths. Between the loading zone and the on-ramp to westbound Highway 24, 20 curb parking spaces are designated with white pavement markings. Additionally, the Project site's private property has a gravel area that is accessible to vehicles at a curb opening on southbound Pleasant Hill Road, which is occasionally used for off-street parking and passenger loading. South of the Project site frontage, another 22 curb parking spaces are marked between the westbound freeway on-ramp and Mount Diablo Boulevard. On-street parking is prohibited on both sides of the roadway on all other segments of Pleasant Hill Road, on Deer Hill Road, and on Stanley Boulevard between Pleasant Hill Road and a point approximately 200 feet west of Camino Diablo.

In late January 2012, TJKM observed the usage of the existing parking and passenger loading areas fronting the Project site along the west side of Pleasant Hill Road, as well as passenger loading activity at other locations in the vicinity. Observations were conducted before and after school on regular session days at Acalanes High School during non-rainy weather. The observations of parking occupancy along the west side of Pleasant Hill Road are summarized as follows:

- A maximum of 13 vehicles parked along the curb between the loading zone and the on-ramp to westbound Highway 24. (Several of these vehicles were parked by contractors working on a roadway improvement project toward the south end of Pleasant Hill Road, based on drivers observed being dropped off from the contractor's trucks in the afternoon; the improvement project has been completed.)
- No vehicles were observed parking on the Project site property except for the short-term passenger loading activity described below.
- A maximum of six vehicles parked south of the westbound freeway on-ramp, no more than two of which parked in the northerly ten spaces between the westbound on-ramp and the westbound-to-southbound loop off-ramp, with the majority parked in the spaces closest to Mount Diablo Boulevard. At the maximum occupancy observed, 16 parking spaces remained available south of the westbound on-ramp.

Observations of passenger loading activity along the west side of Pleasant Hill Road south of Deer Hill Road are summarized as follows:

- In the morning before school, a maximum of 14 vehicles dropped off students at the curb loading zone. The maximum number of vehicles present at any given time did not exceed the four-car capacity of the loading zone. No vehicles entered the Project site property during the morning observations.
- In the afternoon at school dismissal, a maximum total of 23 vehicles picked up students at the curb loading zone or Project site property, with no more than six of the vehicles parking for a short time on the Project site property to wait for students. A maximum total of 14 vehicles was present at one time, using the loading zone to capacity (4 vehicles), the Project site property (5-6), and the curb area south of the loading zone (4-5), including vehicles briefly blocking the curb opening that provides access for the Project site property.

- Vehicles arrived at this loading area via U-turns from northbound Pleasant Hill Road (at the Deer Hill Road intersection), through traffic on southbound Pleasant Hill Road, and a few right turns from eastbound Deer Hill Road.

TJKM also observed passenger loading activity for Acalanes High School students occurring at several other locations, including:

- On eastbound Deer Hill Road, up to 40 students were dropped off from vehicles stopped in the traffic queue extending back from the Pleasant Hill Road signal in the morning before school, and then walked east on the roadway in the bike lane to reach the intersection corner. In the afternoon after school, a small number of students were picked up in the right traffic lane on eastbound Deer Hill Road.
- On northbound Pleasant Hill Road, at least 12 students per day were dropped off from vehicles stopped in the traffic queue extending back from the Deer Hill Road/Stanley Boulevard signal in the morning before school. Students exited from vehicles in all traffic lanes (left, through and right), in an area extending at least 150 feet south from the intersection crosswalk. Some of the students dropped off from the left-turn lane walked north on the raised median to reach the crosswalk on the south leg of the intersection, but most walked across traffic lanes between cars to reach the east side of Pleasant Hill Road. At times, students had to cross moving traffic in the northbound right-turn lane. In the afternoon after school, a small number of students were picked up in the left-turn lane on northbound Pleasant Hill Road after walking west in the crosswalk to reach the lane. This activity on northbound Pleasant Hill Road south of Stanley Boulevard clearly presents hazards for the student pedestrians involved.
- A few students were dropped off or picked up at the gas station on the southeast corner of Pleasant Hill Road and Stanley Boulevard.
- On northbound Pleasant Hill Road north of the driveway for the Acalanes High School main parking lot, some passenger loading activity occurs in the bike lane, which is posted as a no-parking zone. After dropping off students at this location, some drivers turn right at the high school driveway south of the tennis courts, make a U-turn using the parking lot aisle, and exit the driveway by turning left onto southbound Pleasant Hill Road, which is a difficult movement during the morning peak hour.
- On westbound Stanley Boulevard, passenger loading along the north curb occurs mostly between the main Acalanes High School parking lot entrance driveway and the Springbrook Pool driveway, using the red curb area at the bus stop or along the traffic lane while stopped in the queue. Relatively little passenger loading activity was observed east of the Springbrook Pool driveway, and curb parking spaces remained available on the north side of Stanley Boulevard near Camino Diablo.
- A great portion of the passenger loading takes place on-campus along the Acalanes High School parking lot aisles, which are accessed at an entrance driveway and an exit driveway on Stanley Boulevard, and a right-turn-only driveway on Pleasant Hill Road. The parking lot aisles and the driveway intersections at Stanley Boulevard are congested during the peak times immediately before and after school.

4.9.3.2 CHANGES IN THE REVISED PROJECT RELATED TO PARKING

The Revised Project would provide parking for the proposed 44 single-family homes in a private garage at each residential unit, with additional parking to be provided along the curb of the two east-west roadways on-site. The Revised Project site plan proposes 78 parking spaces in the parking lot adjacent to the Deer Hill Road/Pleasant Hill Road intersection, with four additional disabled-access spaces located at the Soccer Field drop-off area accessible from Deer Hill Road. The Revised Project also proposes 22 off-street parking spaces in a new parking lot north of Deer Hill Road. The Revised Project would remove up to five existing curb parking spaces and the existing passenger loading zone on southbound Pleasant Hill Road.

4.9.3.3 STANDARDS OF SIGNIFICANCE

The Revised Project would result in a significant transportation and traffic impact if it would:

1. Create demand for parking above the supply which exists or can feasibly be provided.
2. Disrupt or interfere with existing or planned parking facilities.
3. Create inconsistencies with adopted parking plans, guidelines, policies, or standards.

4.9.3.4 PARKING IMPACT DISCUSSION

Street Parking and Passenger Loading Areas

The Revised Project proposes construction of a bus turnout on southbound Pleasant Hill Road between Deer Hill Road and the Soccer Field/Park driveway, where the plans show elimination of up to five existing curb parking spaces and the existing passenger loading zone. However, the maximum observed parking demand of 13 vehicles in the 20 existing curb parking spaces between Deer Hill Road and the Highway 24 westbound on-ramp indicates that five of these spaces could be eliminated without shifting the parking demand to nearby adjacent streets. In addition, the proposed elimination would be further accommodated by the minimum of 16 curb spaces observed to remain available south of the westbound on-ramp, where a total of 22 spaces are marked. A maximum accumulation of nine vehicles at one time was observed at the existing designated passenger loading zone and adjacent curb parking on Pleasant Hill Road, and a maximum of six additional vehicles was observed parking on the Project site (when it was previously accessible), waiting to pick up Acalanes High School students after school. If not replaced with alternative accommodation, the proposed elimination of the existing designated spaces on the west curb of Pleasant Hill Road that are currently used for school passenger loading would result in additional hazardous passenger loading activity at unsuitable locations, which already occurs. However, the proposed Soccer Field/Park parking lot and access driveways will function as an alternative loading zone; the design will include adequate traffic controls and signage to provide pedestrian safety within the parking lot. The relocation of these designated curb spaces used for passenger loading from Pleasant Hill Road to the proposed parking lot and adjacent access driveway would result in a *less-than-significant* impact.

On-Site Parking

TJKM evaluated the proposed parking supply based on review of the Revised Project site plan and City code requirements. Currently, the Revised Project proposal does not specify a ratio of off-street residential parking, which would be provided in a private garage at each residential unit, with additional parking to be provided along the curb of the two east-west roadways on-site. The exact ratio of parking provided for the residential component would be subject to requirements established by the City as part of the design review process and in accordance with parking requirements for the proposed Planned Unit Development rezoning, which is assumed would meet the expected parking demand. To provide an additional reference point for the potential parking demand of the Revised Project's recreation components, TJKM conducted parking accumulation analysis using driveway counts at three representative dog parks in Dublin, Foster City, and San Ramon, and at a soccer field in the community of Blackhawk. These counts are presented in Appendix L. In addition, TJKM reviewed data presented in *Parking Generation, 4th Edition* published by the Institute of Transportation Engineers.

Application of these parking demand ratios based on the Revised Project proposal estimates that the Revised Project would result in weekday, Saturday, and Sunday peak period parking demand of 74, 79, and 86 vehicles, respectively. The Revised Project site plan proposes 78 parking spaces in the parking lot adjacent to the Deer Hill Road/Pleasant Hill Road intersection, with four additional disabled-access spaces located at the Soccer Field drop-off area accessible from Deer Hill Road. Based on these parking demand estimates, the proposed soccer field and park are expected to generate parking demand that would be accommodated by the proposed parking lot on weekdays, but greater than the proposed parking lot supply on Saturdays and Sundays. However, the maximum overflow demand of eight vehicles on Sunday could be accommodated by the 15 on-street parking spaces on Pleasant Hill Road that would remain in place south of the proposed driveway, if the current prohibition of weekend parking along that curb area is eliminated. TJKM recommends that the City repeal the prohibition of weekend parking on the west side of Pleasant Hill Road between the westbound Highway 24 on-ramp and the proposed Soccer Field/Park driveway to accommodate the potential peak parking demand for the soccer field and park on weekends. However, the proposed Soccer Field/Park parking lot has the potential to generate additional parking demand on weekdays beyond that described above. This additional weekday demand would be generated given the proximity of the parking lot to Acalanes High School and the existing on-street parking on Pleasant Hill Road, and the elimination of existing on-street parking spaces in the vicinity of the proposed driveway and bus turnout. Absorbing this potential diverted demand in the parking lot would limit the availability of parking during the weekday afternoon peak demand periods for the proposed soccer field and park and passenger loading activity, resulting in a *significant* impact (Impact TRAF-12).

For the proposed dog park, the Revised Project proposes 22 off-street parking spaces in a new parking lot north of Deer Hill Road. Based on the average peak period parking accumulation of 18 vehicles observed at the three representative dog parks, the proposed parking supply for the dog park is expected to be adequate. Therefore, parking demand associated with the dog park would result in a *less than significant* impact.

TJKM also reviewed the parking dimensions proposed on the Revised Project site plans. All of the proposed parking would be at a 90-degree angle to the aisles, for which the City's off-street parking dimensions require a minimum aisle width of 26 feet and a minimum stall depth of 18 feet. All parking aisles appear to meet the minimum width standard. However, the parking stalls are labeled with a depth of 16 feet between the back of the stall markings and the raised curb near the front of the vehicle, which is acceptable if the remaining two feet, which are assumed for vehicle front overhang, are a flat area with approximately the same height as the curb (typically six inches). The proposed parking design features would not substantially increase hazards, and the resulting impact would be *less-than-significant*. However, TJKM recommends that the site plan be revised to address the potential issues related to stall depth and vehicle front overhang during the design review process.

One significant parking impact is identified above and would be mitigated to a less-than-significant level with the implementation of Mitigation Measure TRAF-12. Mitigation measures are presented Section 4.9.3.6, Summary of Significant Parking Impacts and Mitigation Measures.

4.9.3.5 CUMULATIVE IMPACTS

Similar to the previous descriptions of the Revised Project's impacts relative to Existing Conditions, the elimination of up to five existing curb parking spaces and the existing passenger loading zone on the west side of Pleasant Hill Road would be accommodated respectively by curb parking spaces expected to remain available and by the alternative loading zone at the proposed Soccer Field/Park parking lot and access driveways, under future Cumulative Conditions. The proposed on-site parking supplies would accommodate the parking demands generated by the Revised Project land use components under future Cumulative Conditions, except a potential overflow demand of up to eight vehicles on weekends for the Soccer Field/Park parking lot, which would be accommodated by the 15 remaining on-street spaces on the west side of Pleasant Hill Road with the recommended City repeal of the current weekend parking prohibition at those spaces. Additionally, potential diversion of non-project parking demand to the Soccer Field/Park parking lot could limit the availability of that parking during weekday afternoon peak demand periods, but Mitigation Measure TRAF-12 would also result in a cumulative impact that is less than significant. Therefore, Under Cumulative plus Revised Project Conditions, the Revised Project would not have additional parking impacts.

4.9.3.6 SUMMARY OF SIGNIFICANT PARKING IMPACTS AND MITIGATION MEASURES

The Revised Project would result the following significant parking impacts.

TRAF-12	**The proposed Soccer Field/Park parking lot would generate additional demand for parking on weekdays beyond that which is estimated for the proposed soccer field and park based on potential diversion of existing parking demand from nearby Acalanes High School and on-street spaces on Pleasant Hill Road. This additional weekday demand would potentially not be accommodated by the proposed parking lot capacity, resulting in a *significant* impact.**

Mitigation Measure TRAF-12: To mitigate this impact, TJKM proposes the implementation of various parking restrictions within the Soccer Field/Park parking lot to prevent all-day parking and other abusive parking behavior that would potentially displace the Soccer Field/Park users for which the lot is intended. These restrictions will be deliberated through a public process by the appropriate Lafayette review board(s).

Significance after Mitigation: Less than significant.

This page intentionally left blank.